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EG&G ROCKY FLATS

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DATE: October 7, 1993

TO: G.M. Anderson, ERM/ES&E

FROM: T.R. De Mass, P.E., ERM/Sr. Prgm. Mgr., X8760

COPY: NA

SUBJECT: Building 788 and Ancillary Equipment Removal Planning Phase 1 Draft

The attached draft document is provided for your review and comment. Please provide your comments and edits by Monday, 13-Oct.-93. I apologize for the narrow time frame but 788 D&D is a hot item with an accelerated schedule.

Bang up Good Job

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* Possibly could use ERP Dcs. Guid Doc. to assist in managing Project

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1/96

- Removal of building components in phases to minimize the potential for spreading contamination and to ensure proper management of waste materials; and

- Elimination of one or more of the contaminant hazards to allow the facility and/or equipment to be subject to less stringent controls and to be reused for other purposes (as much as possible).

In order to implement these D&D goals, RFP must include the following three considerations:

1. Worker Protection -- Worker protection must be maintained in all circumstances and can never be ignored or compromised in favor of the other two D&D considerations.

2. Engineering Controls and Procedures -- The second consideration involves the establishment of engineering controls and procedures to comply with regulatory requirements.

3. Treatment and Recycle/Reuse -- The final goal considers the use of treatment technologies to allow equipment to be reused in another process or materials/metals to be recovered for recycle. The reuse and recycle of equipment and materials will be based on both economic factors and DOE complex wide policies for waste minimization.

These goals, requirements and considerations were utilized in the preparation of this report, which has been developed to evaluate the preliminary requirements D&D for the RFP Building 788 and ancillary equipment. The generalized process elements developed in Sections 2 through 7 of this report were analyzed from the perspective of Building 788 D&D requirements as the basis for preparation of Section 8.

1.2 Assumptions

In the development this report, the following assumptions were made in order to support the definition of programmatic elements and specific D&D requirements for Building 788:

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1. The transition of major buildings, equipment, and materials from DOE Defense Programs to DOE Environmental Restoration is complete and defined. As such, transition activities have not been included as elements of the D&D Program Planning phase.

2. The selected environmental remediation alternative for RFP Operable Unit (OU) 4 (based on preliminary efforts in support of the OU4 Interim Measures/Interim Remedial Action) will require removal of Building 788. In order to facilitate the

Do we want to include D&D effort in the IAG? I hope not.

OU4 closure activities, it is assumed that the Subproject Baseline and Characterization and the D&D Engineering and Implementation Planning project phases must be completed in FY94 in order to support removal actions in FY95.

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3. An agreement between DOE, the U.S. Environmental Protection Agency (EPA) and the State of Colorado Department of Health (CDH) must be negotiated or the existing RFP Interagency Agreement (IAG)[1] must be expanded to resolve potential regulatory agency oversight issues for those D&D subprojects which currently are not addressed within the IAG. It is assumed that input outside of the D&D program will be required to resolve this potential issue. Also, it assumed that CDH has approval authority of the Building 788 D&D subproject under their jurisdiction over state RCRA programs, since Building 788 is listed under the RFP Revised RCRA Hazardous Waste Permit Part A Application for 'Combined Hazardous Waste, Low Level Mixed Waste, TRU[2] Mixed Waste, and Mixed Residue Units' (Revision 10, October 1992).

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1.3 Purpose and Scope

The EG&G Statement of Work (SOW) for Building 788 and Ancillary Equipment Removal Planning, dated August 30, 1993, requested support for planning D&D activities for the RFP, especially for Building 788. The SOW is divided into two phases with various tasks associated with each phase. Phase 1 includes identifying the general tasks required to implement D&D activities for both the RFP on a site-wide basis and a project specific basis for Building 788. Phase 2 is for actual completion of the scoping and planning activities identified during Phase 1. This document is being submitted to fulfill the Phase 1 Tasks 1 and 2 which includes developing an overall Integrated Process Work Flow Diagram for the site-wide D&D program and defining the primary FY94 work elements for the removal of Building 788.

The Integrated Process Work Flow Diagram (SOW Task 1A) is provided as Figure 1. This diagram and identifies the major elements and decisions that are required to support the site-wide D&D program. The flow diagram was divided into six major functions (time-based project/program phases) which reflect the primary requirements for D&D programs as identified in DOE Order 5820.2A and other guidance documents. These divisions include: 1) D&D Program Planning; 2) Subproject Baseline and Characterization; 3) D&D Engineering and Implementation Planning; 4) Procurement and Contractor Selection; 5) Remediation/D&D Operations; and 6) Post-Decommissioning

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[1] The IAG is the regulatory agreement signed by the RFP site DOE office, EPA Region VIII, and CDH. This document was negotiated and signed to implement the provisions of CERCLA, RCRA, and other related environmental regulations as specified.

[2] Transuranic

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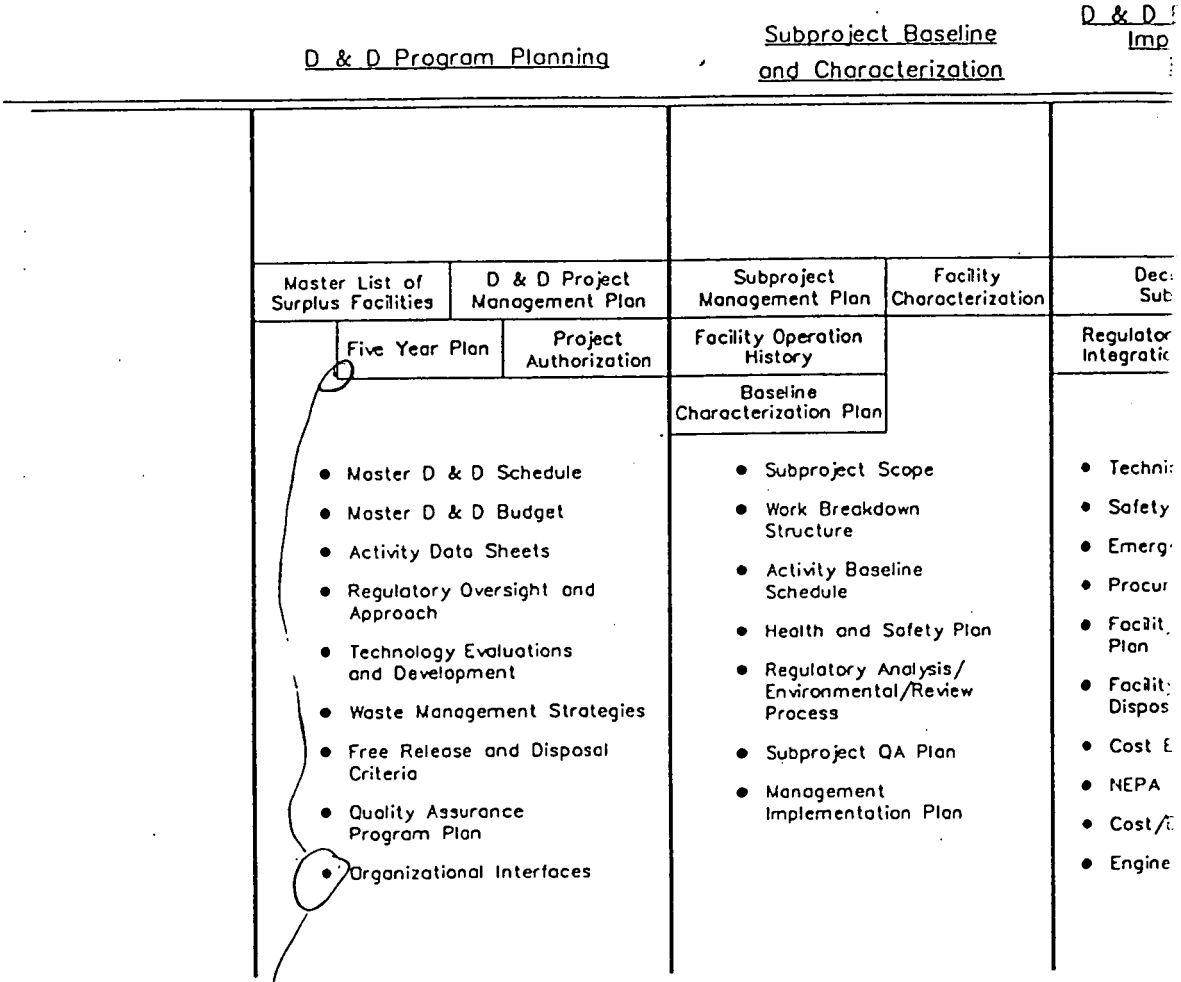

what is d.ff. between bullet & box?

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2.0 D&D PROGRAM PLANNING

Related to FYP budget and ADS list.

The primary D&D program elements and decisions (as identified on Figure 1) during the D&D Program Planning project phase include: 1) Generating a master list of surplus facilities; 2) Preparing a D&D Project Management Plan; 3) Developing and maintaining a Five-Year Plan; and 4) Providing project authorization. The activities related to each of these program elements are further described in the individual subsections that follow. 7

2.1 Master List of Surplus Facilities

DOE Order 5820.2A requires that each DOE field organization must prepare and maintain a complete list of contaminated facilities (both operational and excess). At RFP, this list of facilities is maintained by DOE-RFO in order to identify and assign decommissioning responsibility to the appropriate responsible manager. In order to implement these requirements for facility inventory and to establish the D&D program goals, DOE-RFO (with support from EG&G) must conduct programmatic actions, including: 8

- Establishing and maintaining a master D&D schedule[3];
- Transferring landlord responsibility from operations to D&D programs;
- Developing waste management strategies; — Existing Facilities may possibly be used if they meet requirement for Waste Storage. Interface w Ed Lees task assigned.
- Evaluating existing D&D technologies and developing specific applications at RFP;
- Establishing free-release criteria; and
- Identifying ultimate material disposition.

The surplus facility inventory will be used for developing a master plan for all D&D subprojects (i.e., the phasing of overall D&D activities). The ultimate land use of the RFP, utilization of facilities to facilitate D&D operations or other restoration programs, and the need to maintain utility services for on-going plant operations need to be considered when developing the master schedule.

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One component of the surplus facility list is the formal transfer of landlord responsibilities from the specific plant operations manager to the D&D project management. As specified in DOE Order 5820.2A, Chapter V, 3.a.(5), contaminated facilities may be transferred from one program organization to other by mutual agreement of the programs involved. The program organization to which the contaminated facility is transferred is required to accept full responsibility for

Use a MOU, Memorandum of Understanding between AGMs

[3] Contingent on the site Transition Planning

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surveillance, standby operations, maintenance, and decommissioning of the facility. In addition to providing sufficient funding for D&D operations, the D&D project manager would also be responsible for any maintenance activities, once the transfer takes place, 10
until D&D is complete. As part of the transfer process, a walkdown of the facility should be conducted (utilizing a prepared turnover checklist) to assess facility conditions, regulatory compliance, and operating/maintenance requirements.

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In addition to master planning, the surplus facility inventory could be adapted to facilitate waste management and minimization activities. This activity involves developing waste management strategies for the waste streams that are expected to be generated as a result of D&D operations. The waste streams would be grouped into management categories based on similar contamination characteristics and processing requirements. These groupings will be primarily driven by regulatory requirements, technology constraints and economic considerations. Existing D&D technologies should be evaluated for their potential application at the RFP. This evaluation may involve further development or refinement of the technologies to meet the specific needs of the RFP by initiation of treatability studies and/or demonstration subprojects. These pilot activities could also be 12
used to provide training of site D&D workers.

The waste management strategies should also consider waste minimization by reusing and recycling excess property where practical by expanding the list of surplus buildings to 13
include an inventory of excess equipment and materials. This inventory would be managed through the DOE Excess Property Management System. To ensure that the equipment and material released for uncontrolled public use is safe, it is essential that free-release/reuse criteria be established. As applicable, strategies for waste treatment, packaging, minimization, volume reduction, and shipping/transport should be included.

In order to complete the waste management strategies, provisions for an ultimate disposal facility needs to be provided. Since the decision process involves a number of non-D&D 14
entities, early resolution of this issue is required to avoid schedule delays and D&D program cost escalations.

Surplus facility management and waste management strategies could benefit from the implementation of a Systems Engineering/Integration approach. Such an approach to D&D planning could integrate the elements of D&D operations specified in DOE Orders

and directives (e.g., DOE Order 5820.2A, Sec. V) and guidance extracted from Nuclear Regulatory Commission guidance (e.g., 10 CFR Parts 30, 40, 50, 51, and 72, and various NUREGS) with the system of project management established by DOE Order 4700.1. Since the program requirements for D&D at DOE facilities have not been completely developed and implemented for all field office requirements, the Systems Engineering/Integration approach inherently would involve a graded approach to the development of documentation and the application of directives.

2.2 DOE-RFO Five-Year Plan

The Five-Year Plan represents the long-range planning action for ensuring the proper allocation of funds. This budget cycle includes:

- Establishing and maintaining a master D&D budget, and
- Preparing Activity Data Sheets.

The inventory of surplus buildings and equipment described in Subsection 2.1 also forms the basis for assembling budgets to obtain required funding to execute the D&D program. The budget cycle is initiated with the development of the Five-Year Plan and is carried forward with the submission of annual budget requests for specific subprojects. The quantity of the information used to develop the budget estimates is a critical factor in ensuring that sufficient funds are available when required and to provide the justification for the funding. Activity Data Sheets will be used as the information resource for developing the budgets. The format and content of the Activity Data Sheets should be supplemented, if required, to ensure that D&D program needs and goals are properly funded.

2.3 Project Authorization

The DOE D&D budget cycle terminates with the receipt of project (the term 'subproject' is more appropriate in the case of RFP D&D efforts) funding at which time subprojects may be initiated. The approval for expenditure of budgeted funds represents the final subproject authorization. It is assumed that subproject authorization will provide the authority required to recycle, dismantle, and/or reuse DOE facilities and equipment. A formal subproject authorization mechanism (including requirements for subproject

baseline management and control) will be required to ensure that funds are controlled and are utilized for the purpose intended.

All work should be expense or cost money if not completely DOE 4700.1 GPP following GE funds.

Documentation may be required for submittal in support of project/subproject authorization. The DOE Project Management System (DOE Order 4700.1) provides guidance for project authorization documentation. Most EG&G ERP projects will be managed under the specific requirements established for Major System Acquisitions; however, the basic information required by the project management system for general project management may be applied. The D&D Manager must determine the level of detail and format appropriate on a task-by-task basis for the documentation of the following:

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- Support of the ERP D&D mission
- Subproject objectives
- Preliminary cost baseline
- Preliminary schedule baseline
- Preliminary technical baseline
- Subproject risk analysis
- Identification of subproject organization
- Work breakdown structure

Factors which determine which organizations or individuals must approve or authorize a subproject include, but are not limited to cost, funding, safety issues, required input from external organizations, schedule limitations, high project risks, and impending regulatory issues.

2.4 D&D Project Management Plan

The final major element of D&D Program Planning is the development of a D&D Project Management Plan (PMP). This management plan provides the overall procedures and guidelines for implementation of the D&D program. The Subproject Management Plan for specific D&D tasks should serve as a subtier document to the D&D PMP. The D&D PMP should address the requirements for:

- Determining the regulatory oversight requirements;
- Developing a Quality Assurance Program Plan;

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- Establishing procedures for the transfer of landlord responsibilities and other program level activities; and
- Identifying resource and interface requirements, both for organizational needs (e.g., staff) and facilities/equipment (i.e., development of new D&D facilities, the purchase of support equipment such as monitoring devices and computers,etc.).

Of the above listed items, defining the regulatory oversight requirements is a key issue which will require review of existing agreements and regulations, and developing and negotiation a position for regulatory oversight between DOE, EPA and CDH. Since reaching an agreeable position involves a number of non-D&D entities, early resolution of this issue is required to avoid schedule delays and D&D program cost escalations.

As applicable, the D&D PMP should address the development of engineering designs, cost estimates and safety documentation in accordance with applicable DOE Orders such as 4700.1, 6430.1A, and 5480.23.

& schedules

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11. Project Management, Measurement, and Planning Control Systems
12. Information and Reporting
13. Systems Engineering Management
14. Configuration Management
15. Contingency
16. Quality Assurance
17. Utility Services
18. Responsibility Matrix
19. Approval, Review and Concurrence

This outline of information should be applied (using a graded approach) when developing a D&D SMP. The information developed in the D&D SMP will be primary input for the subsequent development of the Decommissioning Subproject Plan.

All information contained in the Subproject Management Plan will need to be consistent with the constraints and requirements specified in the D&D Project Management Plan.

3.2 Facility Operation History

As a component of developing the Subproject Management Plan, information regarding the operational history of the facility will be reviewed to assess the nature and extent required of D&D activities, including worker protection requirements. The goal of this effort has two components. The first goal of the review is to obtain as much information about the facility as possible early in the planning stages to allow the subproject scope, budget and schedule to be concisely defined. If it is determined that additional information is required, the second goal of the review to precisely identify the data requirements for the development of a Baseline Characterization Plan.

3.3 Baseline Characterization Plan

Once the data requirements have been identified, a Baseline Characterization Plan can be developed to obtain the missing information to support engineering and implementation of the D&D subproject. The characterization plan will include the establishment of Data Quality Objectives to ensure that the information obtained will be of a quality to meet subproject requirements. A Field Sampling Plan and Quality

Assurance Subproject Plan which defines the sample locations and the sample collection and analytical procedures will be included as a component of the Baseline Characterization Plan. To ensure proper protection of the field characterization team, existing Health and Safety procedures and plans will be reviewed and amended as needed to address any specific hazards associated with implementing the Baseline Characterization Plan.

3.4 Facility Characterization

Following approval of the Baseline Characterization Plan, the facility characterization activities will be initiated. The characterization activities include sample collection, laboratory analyses, data validation and data management. The characterization results will be used to select the appropriate decontamination methods, to classify the waste materials into the correct management categories, and to determine the extent of decontamination required to achieve subproject clean-up goals. The evaluation of the analytical results will be factored into the development of the D&D engineering and implementation plans. From a schedule standpoint initiate this as early as possible in the project (critical path) item.

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Waste Management Plan. The Waste Management Plan will incorporate the waste management strategies defined in the D&D Project Management Plan defined in Section 2.

- Cost Estimates -- Definitive cost estimates for all D&D operations.
- Schedule - Project Schedule 21

A National Environmental Policy Act (NEPA) review is conducted for DOE activities that may have an adverse impact on the environment and/or human health. NEPA directives require that appropriate documentation be prepared. For most of the RFP D&D subprojects, NEPA documentation will most likely include preparation of a Categorical Exclusion (CATEX) or an Environmental Assessment (EA). Depending on 22
the complexity of the D&D activities, the NEPA documentation will be prepared and incorporated into the Decommissioning Subproject Plan, or will be prepared as a stand-alone document. Based on DOE directives (e.g., DOE Order 5440.1E), NEPA documentation must be reviewed and approved by DOE-Headquarters.

Safety documentation typically will be required for each D&D subproject. The level of safety documentation required depends on several factors including potential off-site impacts from a release of radioactive material during operations, potential worker exposure, and the risks associated with the D&D activities. Safety documentation for D&D activities at Rocky Flats may include preparation of documentation such as: a 23
Hazards ~~Analysis~~ Assessment Document/Report; a Safety Assessment; Preliminary and Final Safety Analysis Reports (PSAR and FSAR), or other similar documentation. If it is determined that the D&D operations do not pose a significant safety risk to workers or the public, the safety documentation may be incorporated into the Decommissioning Subproject Plan. If the safety documentation is extensive, it should be issued as a separate document. Safety documentation must be approved prior to implementation of D&D operations.

A procurement plan will be included in the Decommissioning Subproject Plan that outlines services and/or equipment to be procured. Long-lead procurement items will be identified in the plan.

An Emergency Response Plan/Contingency Plan will be required as part of the Decommissioning Project 24
Plan. The Emergency Response Plan outlines the actions to be taken in the event of an emergency, including notification requirements, immediate actions to be taken, and

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Existing

- Procedures for stored waste container removal activities for waste stored in drums, boxes, or other containers; 25

- Procedures for implementation of decontamination techniques including contact and non-contact methods for equipment, building structures and surfaces, piping, tanks, and other ancillary equipment;

- Procedures for decontamination verification sampling for equipment and building surfaces, rinsates, and decontamination fluids for both radioactive and nonradioactive contaminants;

- Procedures for dismantlement and size reduction procedures for building structures, vessels, piping, utilities, and other ancillary equipment; 26

- Procedures for waste sampling and analysis for ~~disposal or~~ treatment storage determinations; or dispose

- Radiological control procedures to be employed during decontamination and dismantling activities;

- Waste packaging and transportation procedures; and

- Procedures for verification sampling and analysis following facility D&D.

ALARA

Other facility-specific procedures may be prepared to address issues such as criticality control, contaminant containment and dose control, and safeguards and security for special nuclear material. In general, the amount of detail required in the procedures will be governed by the complexity of the operation. 27

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5.0 PROCUREMENT AND CONTRACTOR SELECTION

5.1 Procurement

As soon as the final engineering and implementation planning has been completed, the D&D Manager should initiate the procurement of items and services that have been identified as required for the D&D efforts. In the instance of long-lead procurement items, this process should be initiated as soon as the specific requirements can be established. Preliminary D&D engineering should provide identification of long-lead procurement items which might affect the project, and should address the development of firm D&D operations and procurement schedules.

Specific procurement project elements include:

- Preparation of procurement plans;
- Identification of long-lead procurement items;
- Development of outline specifications for equipment procurement;
- Development of detailed cost of procurement estimates;
- Development of final specifications for procurement; and
- Procurement of goods, materials and services.

5.2 Subcontractor Selection

Prior to initiating the D&D Operations project phase, it may be necessary (depending on the nature and extent of the D&D project) to procure the services of a subcontractor to perform remediation/removal activities. The subcontractor selection process involves a subcontract technical representative (STR) ~~subcontract administrator~~, or subcontracting officer, who is the EG&G representative authorized to enter into and/or administer contracts and to make determinations and findings concerning them. 28

As with any typical project, D&D remediation/removal services subcontracts are awarded based on a technical evaluation of the credentials of the prospective subcontractor. The technical evaluation, conducted by selected engineers or other technical personnel, is of proposals that have been submitted in response to an Issue For Bid (IFB) or Request For Proposal (RFP). Such evaluations have two purposes: 1) To determine whether the

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proposed subcontractor labor/material estimates will properly meet the performance/ schedule objectives of the contract, and 2) To evaluate the cost of the specific elements and tasks put forward by the subcontractor. Analysis by technical personnel includes a qualitative and quantitative evaluation of such elements as labor hours, materials, equipment, computer usage, travel expenditures, and other direct charges, as appropriate. 29

and indirect charges

Technical evaluation reports should contain information summarizing the following: what was analyzed; how it was analyzed; and conclusions in sufficient detail to support preparation of the negotiation objective and the ensuing negotiation. On major procurements it is important that the technical evaluation report be organized and tailored to the particular circumstances of the contract. For this reason, the contents of technical evaluation reports will vary, according to circumstances.

5.3 Training

As part of subcontractor selection and preparation for remedial/removal field activities, the D&D Manager is responsible for arranging, coordinating, and participation in training of site personnel and contractors/subcontractors as required by regulatory and site directives. This training should be in accordance with the requirements specified in subcontractor conditions for site work, which should include CERCLA/RCRA/NEPA training requirements.

ALSO ← OSHA 1910.120 40 hr & Rad Worker Training.

The instigation of training includes the development of Training Plans and/or Lesson Plans. In determining the requirements for Training Plans, the project training goals should include: 30

- Education in principles;
- Enhancement of skill and practices;

The aim of training is to bring about:

- An understanding of the process;
- An understanding of the tools used in the process;
- An understanding of the variability of tools and processes that may arise in actual field practice.

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Hazardous materials compliance training is to be provided (as per the requirements of 49 CFR) for persons responsible for hazardous materials packing and transportation operations. Also, the D&D Manager must provide training for radioactive materials handling. Site personnel involved in packaging, loading, and handling of hazardous wastes are to have participated in RCRA Hazardous Waste Operations Training. 31

Safety requirements must be met by the implementation of Industrial and Radiological Training, which includes:

- Industrial Hygiene
- Safety and Fire Protection Engineering
- Radiological Safety
- Emergency Response and Reporting

The D&D Manager should ensure that each worker has received the appropriate Health Physics Training for working in radiation areas. Radiological/nuclear safety and control directives may be derived from DOE/EV-0263T, DOE Order 5400.5, and DOE Order 5480.11. Radiological safety training should include specific training to support the concept of ALARA as specified in DOE/EV/1830-TS. Elements of radiological training that are of particular importance are:

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- General employee radiological training;
- Radiological worker (Worker I and Worker II) training; 32
- Specialized radiological worker training;
- Requirements for Radiological Control Technicians;
- Training for specialized facilities (e.g., plutonium, uranium, and/or tritium facilities); and
- Other radiological training and awareness programs.

In conjunction with procurement, the D&D Manager should ensure that copies of vendor data are maintained for use in the preparation of procedures and training materials. Also, when conducting project budgets, the D&D Managers should consider the one-time costs related to operator and worker training.

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5.4 Facility and Site Preparations

Certain preparations should be conducted on the facility and adjacent site in preparation for D&D operations and field activities. These preparations include:

1. Construction/installation of temporary structures required to support field activities.
2. Establishment of access roads, ramps, portals.
3. Designation of a laydown area, including storage areas and working areas, to support disassembly and construction actions.
4. Establishment of office facilities for managerial, technical, and construction staff.
5. Connection of support utilities (e.g. water, electricity, sanitary water) to provide continued service throughout D&D operations.
6. Coordination with site organizations and services to be impacted.
7. Layout of Exclusion Zone, CRZ, Cont. Red. Zone, Support Area

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6.0 REMEDIATION/D&D OPERATIONS

6.1 D&D Operations

D&D operations include decontamination, dismantlement, disassembly, packaging, storage, and disposal of facility structures, components, systems and equipment. These activities should be conducted in compliance with the Decommissioning [Sub]Project Plan established in the D&D Engineering and Implementation Planning project phase. and all permits acquired NEPA, etc

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The D&D Manager should ensure that prior approval for demolition of a DOE-owned facility has been obtained from DOE-RFO (with concurrence from the DOE MA-22 Headquarters organization), in accordance with DOE Order 4300.1C.

Typical elements and considerations for D&D operations include:

Removal of Radioactive Equipment

- Decontamination to the extent possible
- Isolation of system and cutting pipe (radioactive)
- Sampling and characterization of radioactivity
- Size/volume reduction
- Removal and packaging
- Onsite transportation
- Offsite transportation

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Removal of Nonradioactive Equipment

- Segmentation and removal of large vessels and components
- Removal of other equipment
- Verification of uncontaminated status
- Size/volume reduction
- Packaging and transportation
- Salvage or disposal

- Salvage or disposal process
- Decontamination cost/benefit analysis

D&D operations should incorporate the requirements for radiological controls as presented in DOE/EH-256T. These include:

- Implementation of radiological standards;
- Methods of conduct of radiological work;
- Handling of radioactive materials;
- Interfacing with radiological health organizations;
- Radiological training and qualification; and
- Maintenance of radiological records.

Decontamination activities are an integral part of D&D programs that involve radiologically-contaminated equipment and materials. Elements of decontamination activities include:

- End-product criteria and objectives
- Chemical cleaning
- Systems flushing
- Nonchemical (physical) decontamination
- Specification of surface contamination levels
- Partial removal of components
- Cost/benefit analysis for further decontamination

Decontamination operations for surplus equipment (for reuse, disposal, and/or recycling) and the decontamination of structure surfaces (e.g, walls, floors) should comply with the applicable requirements of DOE Orders 5400.5, 5480.11, and 5820.2A. 36

When dealing with the removal of heavy components, certain safety and health protection requirements should be including in work plans. These requirements should include such topics as: rigging/scaffolding safety; physical construction; crane safety; access requirements; worker protection; and occupational/industrial safety. OSHA req.

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project. Preparation of a project closeout checklist is recommended to assist the D&D Manager in verifying completion of all closeout activities.

Closeout activities should include the restoration of the site (as identified within the scope of D&D operations), which may involve removal of site boundary structures, grading, landscaping, and facility/site closure. would scream HP survey may render equip. too hot to be released offsite. 37

Someone would have unfair advantage

One topic of consideration for project termination is the disposition of unused or reusable equipment, supplies, and/or hardware. While there is no set policy for dealing with disposition, it is preferable if the project products can be disposed of with the contractor(s) involved. Even if sold at a loss, the situation may be preferable to future storage, maintenance, or other non-usage costs. The D&D Manager is to determine the appropriate course of action as soon as possible, once project termination is imminent. 38

Possibly auctioned off (typical)

The D&D Manager should coordinate with the DOE-RFO office to prepare a Subproject Data Package in accordance with DOE Order 5820.2A, Sect. V. This Subproject Data Package should include (as a minimum):

- The Record of Completion;
- The final radiological and chemical survey report;
- The Subproject Final Report; and
- Appropriate public notices (if applicable).

These documents are to be retained permanently in the DOE archives.

7.4 Post-Closure Care

The decommissioned property may be released from DOE ownership without additional care according to the requirements of DOE Order 4300.1C, if DOE-RFO (in conjunction with DOE-Headquarters) certifies that the property meets the applicable release criteria for free release, residual radioactivity, and/or residual hazardous chemicals. The property then will be identified by notation in the legal land records of the appropriate state government organization.

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The decommissioned property may be reused for other DOE activities that may or may not involve radioactive and/or hazardous chemicals. If appropriate or applicable release criteria are not met, the property may be used for other activities provided that adequate safety and health protection controls are observed and maintained.

When closing facilities identified as Hazardous Waste Management Units under RCRA, the RCRA Closure Plan will identify the requirements for Post-Closure Care (as defined by RCRA, and addressed by 40 CFR 264.111). The Closure Plan describes the project activities related to closing a particular operation or facility involving the removal of hazardous substances, wastes, or constituents. The plan addresses the processes to be used for the closure that will ensure that when the hazardous substances, wastes, or constituents are removed, the operation/facility will no longer be a concern under the requirements of RCRA. If all of the RCRA constituents can be removed, no further care and monitoring is required. If RCRA constituents remain in place, additional institutional care may be required.

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History; Sampling and Analysis Plan; Quality Assurance and Quality Control; and Data Management Procedures. The Baseline Characterization Plan will identify sampling locations and basis for their determination, sampling methodology, quality control sampling and rationale, and analytical methods for both radiological and hazardous contaminants.

The baseline characterization results are used to define the decontamination methods appropriate to facility and ancillary equipment (as necessary), to determine potential waste and waste residue disposal options, and to determine when decontamination operations have been completed. The baseline characterization plan must be implemented prior to evaluation of decontamination technologies and selection of waste disposal options.

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Review of historical operations and past processing records will be used to define what components, structures, and ancillary equipment are to be included in the decontamination and/or decommissioning of Building 788. This document should establish the extent of the facility boundaries included in the D&D effort, as well as define the operating history of Building 788. The history should focus on information that supports the determination of what contaminants may be present and should included in the baseline characterization and sampling during decontamination operations. The review should be of sufficient detail to allow the inclusion of contaminants of concern or dismissal of those contaminants that are determined to not be present based on process knowledge. Sufficient detail on the facility inventory should also be presented to allow an engineering evaluation of D&D methods appropriate to the facility and associated ancillary equipment during D&D Engineering and Implementation Planning.

Bldg 788 should have a WSRIC book & outlined the proc & flow diagram & output informal Forms.

8.2 D&D Engineering and Implementation Planning

The D&D Engineering and Implementation Planning task includes the following task elements: Decommissioning Subproject Plan; Regulatory Integration; and Procedure Preparation.

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Decommissioning Subproject Plan

The Decommissioning Subproject Plan is a comprehensive plan that forms the basis for D&D of Building 788. Included in the Decommissioning Subproject Plan are:

- Technical approach and rationale for selected methods for decontamination of equipment and structures, equipment, and ancillary equipment;
- Engineering design, including plans and specifications, for facility dismantlement and facility-specific support systems or equipment;
- Cost/Benefit Analysis of optional approaches to decontamination, dismantlement, and waste disposal;
- Building 788 Waste Management Plan that describes wastes to be generated, waste volumes, contaminant levels, disposal criteria, waste minimization approaches, and waste disposal and transport criteria for contaminated and clean materials;
- Definitive cost estimates for all D&D operations; and
- Free release criteria for decontaminated and clean materials;
- Schedule

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As part of all DOE activities, a National Environmental Policy Act (NEPA) review is conducted and appropriate documentation is prepared. For the Building 788 D&D, potential NEPA documentation could include a Categorical Exclusion or an Environmental Assessment. The NEPA documentation will be prepared and incorporated into the Decommissioning Subproject Plan.

Good

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Safety Documentation will be required for the Building 788 D&D activities. At a minimum, a hazards classification will be prepared as a separate document that will categorize the Building 788 D&D activities as low, moderate, or high hazard. The hazards classification defines the need for additional safety documentation such as a Preliminary Safety Analysis Document (PSAD) or Preliminary Safety Analysis Report (PSAR). It is anticipated that for this project, additional safety documentation beyond the hazards classification will not be required.

A procurement plan will be included in the Decommissioning Subproject Plan that outlines services and/or equipment to be procured. Long-lead procurement items will be identified.

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An Emergency Response Plan/Contingency Plan will be required as part of the Decommissioning Project Plan. Notification requirements and procedures will be identified and made available to all personnel associated with the Building 788 D&D. 43

Regulatory Integration

Building 788 is located within the boundaries of OU4, and must be dismantled prior to or along with implementation of the Solar Evaporation Ponds IM/IRA. In order to facilitate integration with the closure of the Solar Ponds, regulatory requirements for closure of Building 788, a RCRA storage facility, must be defined in the context of the Solar Ponds closure. The regulatory agencies may have to concur with the technical approach to D&D and the approach to baseline characterization and verification sampling. It is probable that as the Solar Ponds IM/IRA progresses, regulatory requirements for the D&D of Building 788 will evolve as well.

Procedure Preparation

Prior to implementation of D&D activities, specific procedures will be prepared. These procedures will include at a minimum:

- Residual waste removal activities;
- Waste container removal activities;
- Decontamination techniques for equipment;
- Decontamination of building structures and surfaces;
- Decontamination verification sampling for equipment and building surfaces; 44
- Dismantlement of building structures, piping, utilities, and other ancillary equipment;
- Waste sampling and analysis requirements for disposal or storage determinations;
- Radiological control during decontamination and dismantling activities
- Waste packaging; and
- Verification sampling and analysis following facility D&D.

Is it required to have an independent professional engineer to certify/verify the D&D operations? This is required under RCRA for Closure certification A certification is given at the end of the project 35

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 1.2

Work Element Title: Facility Operating History

Description of Work Element: The Building 788 Facility Operating History work element consists of examination of past and present operations to establish contaminants that may be present, extent of contamination, and regulatory basis for D&D. The information from the evaluation of past and present operations will allow preparation of the Baseline Characterization Plan. WSRIC Manual for 788? 45

Deliverables: None

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to assure that adequate documentation and personnel with knowledge of Building 788 history are available for this effort. Definition of detailed historical information will require interviews with various EG&G organizations, including Operations, Radiological Engineering, Regulatory Analysis, and Environmental Restoration Management.

Off-site Interfaces: None

Required Procedures: None

Required Training: None

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 1.3

Work Element Title: Baseline Characterization Plan

Description of Work Element: The Building 788 Baseline Characterization Plan will outline sampling and analysis requirements for determining contaminant levels requiring decontamination and for establishing worker protection requirements during D&D activities.

Deliverables: Building 788 Baseline Characterization Plan

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to that the sampling and analysis strategies and procedures are consistent with EG&G guidelines and procedures. It is the responsibility of EG&G Quality Assurance organizations to ensure that the QA/QC protocol are consistent with the objectives of the work to be performed, and are also consistent with the EG&G/regulatory QA requirements.

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or Proj mgr.

Off-site Interfaces: None

Required Procedures: Sampling procedures for surface sampling for radioactive and hazardous contaminants. Other existing EG&G procedures for worker protection during sampling, and other waste sampling procedures should be adequate for the remaining characterization activities.

Required Training: None

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 1.4

Work Element Title: Facility Characterization possibly under also?

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Description of Work Element: Characterization of Building 788 will consist of sampling and analysis of residual wastes in the building that will remain following general facility housekeeping, and characterization of equipment, structures, and surfaces that may or may not be contaminated.

Deliverables: Facility Characterization Results Report

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to procedures defined in the Facility Characterization Plan are followed during characterization activities, and that results are interpreted accordingly. Analysis of collected will be completed at an on-site laboratory. It must be established whether the data will be entered into the Rocky Flats Environmental Data System (RFEDS).

Off-site Interfaces: None

Required Procedures: None

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Required Training: Characterization personnel will be required to attend training as follows:

- General Employee Training
- Radiation Worker Training
- Building 788 Orientation Training
- Sampling Procedure Training

OSHA 1910.120

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 2.1

Work Element Title: Decommissioning Subproject Plan

Description of Work Element: The Building 788 Decommissioning Subproject Plan outlines all activities required to complete the D&D of the building, including required engineering, design, and waste disposition activities.

Deliverables: Building 788 Decommissioning Subproject Plan; Building 788 Free Release Criteria; Building 788 Waste Management Plan; NEPA Documentation; Hazards Analysis; Procurement Plan; Emergency Response Plan

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to ensure that the Decommissioning Subproject Plan is complete and accurately defines the nature of the work and that the technical approach to Building 788 D&D activities are sound. Reviews of the plan and associated documents will be required by various EG&G organizations ~~including~~ as decided by Project Team Quality Assurance, Central Engineering, Radiological Engineering, and Safety, and Environmental Restoration Management. 49

Off-site Interfaces: Contact with radioactive waste disposal facilities such as the Nevada Test Site (NTS) may be required to ensure that the waste anticipated to be generated can be accepted if off-site disposal is anticipated.

Required Procedures: None

Required Training: None

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 2.2

Work Element Title: Regulatory Integration

Description of Work Element: This work element consists of ensuring that planning activities are consistent with the OU4 IM/IRA.

Deliverables: None

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to ensure that the Decommissioning Subproject Plan schedule is integrated with the OU4 IM/IRA. Frequent communication with the EG&G OU4 Project Manager will be required.

Off-site Interfaces: ~~None~~ CDH/EPA/DOE

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Required Procedures: None

Required Training: None

Regulatory Interfaces: The integrated approach to D&D of Building 788 and closure of the Solar Evaporation Ponds will require communication of the approach to the regulatory agencies.

Key Decisions: None

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 2.3

Work Element Title: Procedures Preparation

Description of Work Element: This work element consists of preparation of procedures associated with decontamination and dismantlement of Building 788.

Deliverables: Residual waste removal activities; Waste container removal activities; Decontamination techniques for equipment; Decontamination of building structures and surfaces; Decontamination verification sampling for equipment and building surfaces; Dismantlement of building structures, piping, utilities, and other ancillary equipment; Waste sampling and analysis requirements for disposal or storage determinations; Radiological control during decontamination and dismantling activities; Waste packaging; Verification sampling and analysis following D&D & Team 51

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to ensure that the procedures prepared under this work element are consistent with good engineering practices and EG&G guidelines.

Off-site Interfaces: None

Required Procedures: See above

Required Training: None

Regulatory Interfaces: None

Key Decisions: None

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EG&G Rocky Flats, Inc. - Environmental Restoration Program (ERP)
Decontamination and Decommissioning Project

Building 788 and Ancillary Equipment Removal Planning (Phase 1) Report

DRAFT REPORT COMMENT RESOLUTION

REFERENCE: Comments provided by Pete Sanford, Ted Kearnes, and Tom Bearden, KMI, via annotated reference outline (see attached)

Comment #	Reference	Response
1	Sec. 1.1	No response required.
2	Sec. 1.2	It is agreed that the reference should have stated transfer of ownership to DOE Environmental Management rather than Environmental Restoration; this will be corrected, and text modified to accommodate the comment. The information cited for inclusion would seem more appropriate as background information; this background will be integrated into Sec. 1.1. It should be noted that the EM-40 Management Plan was not identified/provided for review by ES.
3	Sec. 1.2	It is assumed that this comment should read 'by September 30, 1994'; the passage will be modified to include this information.
4	Sec. 1.3	No response required.
5	Sec. 2.1	The information provided will be integrated as appropriate into the existing text.

3/

Comment #	Reference	Response
6	Sec. 2.1	The referenced documents (EM-40 FY 95-99 ADSs and ER MSA Project Plan) were not identified/provided for review by ES when preparing this report; copies will be required for review and inclusion during Phase 2 of this task. The comments provided will be integrated as appropriate into the existing text.
7	Sec. 2.1	The referenced document (Technical Strategic Plan for the D&D Integrated Demonstration) was not identified/provided for review by ES when preparing this report; a copy will be required for review and inclusion during Phase 2 of this task. The comments provided will be integrated as appropriate into the existing text.
8	Sec. 2.2	The referenced information for ADS development is required by ES for review and appropriate citation.
9	Sec. 2.3	General information from this comment will be integrated into the existing text. Information specific to Building 788 will be used in Sec. 8 of this report.
10	Sec. 2.4	Based on conversations with EG&G representatives, ES was under the impression that a programmatic D&D Project Management Plan was either completed or under development that would address the entire Rocky Flats Plant D&D program. This document would be used as the parent document for project-specific Subproject Management Plans. This should be clarified. Also, since the ER PMP was not identified/provided for review by ES, a copy of this document should be provided for review and inclusion or reference as appropriate. The relationship of the EG&G MIPs that are developed for D&D projects to the ER MIP should be defined.
11	Sec. 3.1	No guidance for the development of SPBs was included. This information will be required before this comment can be resolved.
12	Sec. 3.2-4	No response required.

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Comment #	Reference	Response
13	Sec. 4.0	No response required.
14	Sec. 5.0	No response required.
15	Sec. 6.0	The cited Handbook was not available for review when this report was developed; it has been requested as a source of information for the Phase 2 activities which will further develop this report.
16	Sec. 7.4	This comment is based on the public/regulatory pressures that request that argue that activities at Rocky Flats should be sufficiently thorough to yield the site available for unrestricted use (free release) after completion. Although this may not be commensurate with current DOE planning, this rationale must be considered and evaluated.
17	Sec. 8.0	It is assumed that this comment should read 'by September 30, 1994'; the passage will be modified to include this information.
18	Sec. 8.1	The statement as written does not require that the referenced plans are to be stand-alone documents. Rather, it is intended that these plans be addressed as separate topics. It is true (based on the graded approach) that the complexity and nature of the project should dictate which documents will require full development as an independent plans.
19	Att. A	Agreed; this comment will be included for general information.
20	general	It is agreed that complete agreement is required for the implementation of a planning tool such as this report; it is assumed that the Phase 2 work to be conducted by ES in support of EG&G D&D programs will deal with such issues. The documents identified in the process reflect the most recent information available from national DOE sources, and it must be agreed that Rocky Flats conforms to this documentation. No action is required at this time based on this comment.

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Comment #	Reference	Response
21	Sec. 1.1	It is unclear that the national DOE commitment to reuse and recycle is not emphasized at Rocky Flats. This is a stated requirement of DOE Order 5820.2A, Chapter V. Documentation should be provided to substantiate this comment.
22	?	It is unclear which plans are requested to be packaged into standard ER MSA documents, or what this would entail. Additional information is required to resolve this comment.
23	Sec. 2.1	In order to make the appropriate corrections, any Transition responsibilities that are incorrectly assigned must be specifically identified. In general, it was intended that these items (as a minimum) be coordinated with DOE-RF and DOE-HQ.
24	Sec. 4.1	It is assumed that this comment refers to the discussion on NEPA documentation first referenced in Sec. 4.1 of the report. It is unclear what 'accelerate the NEPA process' means. If this refers to an earlier start, it would be difficult to imagine that enough information would be available prior to this project phase to accurately conduct the necessary assessments. If the comments are to condense the time requirements for the conduct and completion of NEPA documentation, this must be addressed on a project-by-project basis.
25	Sec. 1.2	It is unclear what expansion in Sec. 1.2 is required.
26	Sec. 8.1	If this comment refers to the plan documents listed in 8.1, the process for determining how to integrate these documents with ER MSA requirements is indeterminate, and may require further study in the Phase 2 support planned for this effort.
27	Sec. 8.1	Information on the mandate for the use of the SAFER approach is required to ensure proper consideration and citation of the directive.
28	Sec. 8.2	This consideration is included in the listing provided on page 34.

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Comment #	Reference	Response
29	?	Agreed; however, this task was beyond the scope of the Phase 1 document, and is to be considered under the planned Phase 2 support.
30	Sec. 1.1	Additional information will be provided to embellish the passage as required; however, the information provided is accurate and useful as stated.
31	Sec. 2.1	This information will be added as an example of probable methods, but will not be stated as the accepted methods of choice for current disposal. If it is required that an assumption is appropriate and must be made, then this should be addressed in Sec. 1.2.
32	Sec. 2.1	Additional information will be provided to address the basis of the System Engineering approach as defined in DOE Order 4700.1.
33	Sec. 2.3	The next page references DOE Order 4700.1, which should be adequate for this section. However, this section was intended to address whatever type of authorization that is required for EG&G D&D projects.
34	general	This statement should be accommodated through the recurring use of terms such as "preliminary requirements", "generalized processes", and "primary work elements" throughout the report.
35	Sec. 4.1	The section does not suggest that the studies and plans referenced cannot stand alone as needed. However, these documents (or the primary information from these documents) should be considered for inclusion in the SPMP, much as a CDR will be included in a DCP. Also, the documents suggested in this report represent more that merely the "best packaging of information", and actually represent a compilation of document types utilized for D&D projects based on DOE and NRC requirements. If other documentation has been specified by DOE directives, then a copy of the directives mandating the use of this documentation is needed in order to correctly identify requirements.

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Comment #	Reference	Response
36	Sec. 4.1	Since the process for D&D is not explicitly described by DOE Order 4700.1, it is incorrect to rigidly apply the criteria and semantics to D&D tasks. A more reasonable approach would be to draw analogies wherever possible to implement the intent of DOE Order 4700.1, if not the verbatim letter. Since at this stage of development for D&D projects we are talking 'definitive engineering/design', we may draw the analogy with 'definitive, or Title II, design'. It is entirely possible that definitive D&D cost estimates may be required on projects that involve no Title II design, so the use of the DOE Order 4700.1 nomenclature of 'Title II Design Cost Estimate' would be a misnomer. The wording as provided is adequate to address the level of cost estimate required.
37	Sec. 5.3	This information sounds like credible advice for Phase 2 of the ES support task, but beyond the scope of this initial effort. The information provided in this preliminary effort is to identify types of training that may be applicable, rather than to recite specific site programs. If any reviewer can identify specific information that has been omitted or that should be deleted, then proper adjustments can be prepared.
38	Sec. 6.2	Based on philosophy developed for D&D projects at the Fernald Environmental Management Project, D&D operations fulfills the definition of a waste generator under 40 CFR 262. It is unclear which 'other requirements' must be met other than those associated with the general directives as indicated.
39	Sec. 7.3	There is another level of detail for the EG&G D&D programs that is to be developed in subsequent task assignments with ES. These subtier levels of detail will address more specifically the applicable elements of DOE Order 4700.1.
40	Sec. 8.1	The documents referenced here are identical to those described in previous sections of this report. The reader can refer to early sections for more details on each type of document.
41	Sec. 8.1	The description of the specific requirements for completing any of the listed documents is beyond the scope of this initial effort, and is to be addressed in Phase 2 of the support provided by ES.

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Comment #	Reference	Response
42	general	Information will be added to Sec. 4.1 to address free-release criteria. It is unclear what other changes are referenced by this comment.
43	Sec. 8.2	It was beyond the scope of this preliminary task to identify the specific requirements for procedures that exist vs. those that must be developed. This section was intended only to provide a listing of the minimal requirements for procedures. The intent of the review cycle for this report was to obtain any specific information that could be incorporated. Any information provided by reviewers on which procedures currently exist (including title, date, and content) could be utilized.
44	Sec. 8.3	Agreed as written. Wording will be extracted from these comments to include in the appropriate section.
45	Att. A	The use of a WBS requires a level of sophistication that was not possible in the time period allowed for this deliverable. It is anticipated that the Phase 2 support efforts will fully address the application and use of a WBS for this assignment. Also, the comments regarding the use of the term 'Key Decisions' will be incorporated.

EG&G Rocky Flats, Inc. - Environmental Restoration Program (ERP)
Decontamination and Decommissioning Project

Building 788 and Ancillary Equipment Removal Planning (Phase 1) Report

DRAFT REPORT COMMENT RESOLUTION

REFERENCE: Comments provided by Tom Lindsay and Jim McLaughlin, EG&G Rocky Flats ERP, via markup of draft document text (see attached sheet excerpts)

Comment #	Reference	Response
1	cover memo	No response required.
2	cover memo	Agreed that the ERM Design Guidance Manual will provide useful input to this program. While more detailed than requirements for the Phase 1 ES support efforts, information from this document will be extracted for use in the development of Phase 2 deliverables.
3	page 2	Since the item indicated is an assumption, it has not been verified that the statement is true as written. The Phase 2 support efforts will attempt to determine if this statement can be verified.
4	page 3	It has not been determined that the existing IAG will be the governing directive for D&D efforts at Rocky Flats.
5	page 3	It has been considered that a separate regulatory document (similar to the IAG) might be required to define the regulatory requirements for Rocky Flats D&D projects.

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Comment #	Reference	Response
6	Figure 1	The 'bullets' were included to represent additional elements, plans, documents, and considerations that occur during the indicated project time phase that supplement the preliminary process phase elements (e.g., the block flow diagram elements). Wording will be added to clarify these applications.
7	page 6	Wording will be added to incorporate the intent of the comment.
8	page 6	This comment seems to be editorial in nature, and does not require a specific response for this report.
9	page 6	Wording will be added to reflect the intent of the comment.
10	page 7	No response required.
11	page 7	This comment seems to be editorial in nature, and does not require a response for this report.
12	page 7	The comment is somewhat subjective; also, the specific time allotments for technology evaluations are not germane to the level of detail addressed in this report.
13	page 7	This comment seems to be editorial in nature, and represents a greater level of detail than intended for this report.
14	page 7	No response required; however, the sentiment implied by this comment is noted.
15	page 8	No response required.
16	page 9	DOE Order 4700.1 accounts for funding for MSA, GPP, and GE projects, which should accommodate any expense/cost scenarios that would be applicable to the Rocky Flats Plant. However, a statement will be added to address the fact that money allocated from the RFP MSA for Environmental Restoration is treated in the same manner as expense or cost money.

Comment #	Reference	Response
17	page 9	The RFP ER program is managed under an MSA, not as a line item project.
18	page 10	Insert will be added as indicated.
19	page 12	No response required.
20	page 13	The intent of the statement will be integrated into the indicated section.
21	page 15	The item as indicated will be inserted and defined.
22	page 15	No response required.
23	page 15	Revised wording will be incorporated.
24	page 15	Revised wording will be incorporated.
25	page 17	The insert indicated does not add to or improve the intent of the affected statement, and would lead to inconsistencies within this listing of requirements.
26	page 17	Wording will be added in accordance with the indicated changes.
27	page 17	Insert will be added.
28	page 18	Alteration will be made as indicated.
29	page 19	It is not determinate that indirect charges should be included in this synopsis of cost accounting.
30	page 19	This comment was eliminated by the author.

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Comment #	Reference	Response
31	page 20	No response required.
32	page 20	No response required.
33	page 21	Information will be included to accommodate the comment.
34	page 22	The statement as written is not appropriate for inclusion in the indicated passage.
35	page 22	No response required.
36	page 24	Information will be included to accommodate the comment.
37	page 28	The comment presents a valid consideration; the wording in this passage will be modified to address the intent of this comment.
38	page 28	A parenthetical statement will be added to address the comment.
39	page 29	No response required.
40	page 33	While the comment does not require alteration of the report, the information will be useful when initiating actions for Bldg. 788 removal.
41	page 34	The item indicated will be added.
42	page 34	No response required.
43	page 35	Revised wording will be incorporated.
44	page 35	The general intent of this comment will be incorporated.

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Comment #	Reference	Response
45	page A-4	The comment does not require alteration of the report, but will be useful when initiating actions for Bldg. 788 removal.
46	page A-6	Wording will be added to reflect the intent of the comment.
47	page A-8	At this time, it is assumed that wastes under the building will be remediated as a function of the cleanup of the OU4 Solar Ponds.
48	page A-8	Insert will be integrated as requested.
49	page A-10	Wording will be added to accommodate the comment.
50	page A-12	Insert will be integrated as requested.
51	page A-13	Insert will be integrated as requested.

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Technical Support Services to
EG&G Rocky Flats

Environmental Restoration Program (ERP)
Decontamination and Decommissioning Projects

Building 788 and Ancillary Equipment Removal Planning (Phase 1)

ENGINEERING-SCIENCE, INC.
DENVER, CO
a unit of Parsons Environmental Services, Inc.

TASK ORDER MTS343787GG3
MASTER TASK SUBCONTRACT MTS225453RR

REVIEW DRAFT
October 06, 1993

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EG&G Rocky Flats
Environmental Restoration Project

BUILDING 788 AND ANCILLARY EQUIPMENT REMOVAL PLANNING (PHASE 1)

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1.0 INTRODUCTION AND D&D PROGRAM BASIS

1.1 D&D Overview

The U.S. Department of Energy (DOE) has focused internal efforts for the decontamination and decommissioning (D&D) of surplus facilities within the DOE Office of Environmental Restoration and Waste Management (EM). This Office has the challenge of developing a total system within the DOE complex to resolve issues associated with site and facility cleanup activities. The current estimate for D&D of surplus facilities within the DOE complex is approximately $50 billion, based on available information that has been prepared at varying levels of confidence. The projected costs are anticipated to escalate as more detailed estimates are prepared for additional facilities.

As an element of the national DOE D&D objectives, the Rocky Flats Plant (RFP) is tasked with developing D&D programs, including budgets and estimates, for the remediation of onsite facilities and areas. As the primary site support contractor to the DOE Rocky Flats Plant Operations Office (DOE-RFO), EG&G Rocky Flats, Inc. (EG&G) is directly involved in the development and implementation of D&D programs for RFP under the EG&G Environmental Restoration Project (ERP).

The scope of the RFP D&D program is to address the removal of contamination associated with buildings and equipment in order to support programs for continued use, reuse for nonradioactive missions, or for release for unrestricted use. Specifically, the D&D program will consist of 1) recycling useable raw materials and products; 2) decontaminating and recycling recoverable internal building components and equipment; 3) implementing an asbestos abatement program; 4) managing, treating, and packing non-recoverable materials, equipment and other building components for disposal; 5) refurbishing buildings for future unrestricted use; 6) dismantling surplus buildings; and 7) properly managing the waste generated by D&D operations to limit future liabilities.

The basic requirements for D&D programs for radioactively contaminated facilities are mandated by DOE Order 5820.2A, Chapter V. This DOE Order requires that radioactively contaminated facilities for which DOE is responsible shall be managed in a safe, cost-effective manner to assure that release of and exposure to radioactivity and other hazardous materials comply with Federal and State standards. In addition, this Order requires that facilities, equipment and valuable materials shall be recovered and reused when practical.

Consistent with DOE Order 5820.2A, the D&D goals for the RFP include:

- Elimination or reduction to acceptable levels the hazards and risks associated with facility/equipment contamination to ensure worker protection during the dismantling of surplus facilities;

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- Removal of building components in phases to minimize the potential for spreading contamination and to ensure proper management of waste materials; and

- Elimination of one or more of the contaminant hazards to allow the facility and/or equipment to be subject to less stringent controls and to be reused for other purposes (as much as possible).

In order to implement these D&D goals, RFP must include the following three considerations:

1. Worker Protection -- Worker protection must be maintained in all circumstances and can never be ignored or compromised in favor of the other two D&D considerations.

2. Engineering Controls and Procedures -- The second consideration involves the establishment of engineering controls and procedures to comply with regulatory requirements.

3. Treatment and Recycle/Reuse -- The final goal considers the use of treatment technologies to allow equipment to be reused in another process or materials/metals to be recovered for recycle. The reuse and recycle of equipment and materials will be based on both economic factors and DOE complex wide policies for waste minimization.

These goals, requirements and considerations were utilized in the preparation of this report, which has been developed to evaluate the preliminary requirements D&D for the RFP Building 788 and ancillary equipment. The generalized process elements developed in Sections 2 through 7 of this report were analyzed from the perspective of Building 788 D&D requirements as the basis for preparation of Section 8.

1.2 Assumptions

In the development this report, the following assumptions were made in order to support the definition of programmatic elements and specific D&D requirements for Building 788:

1. The transition of major buildings, equipment, and materials from DOE Defense Programs to DOE Environmental Restoration is complete and defined. As such, transition activities have not been included as elements of the D&D Program Planning phase.

2. The selected environmental remediation alternative for RFP Operable Unit (OU) 4 (based on preliminary efforts in support of the OU4 Interim Measures/Interim Remedial Action) will require removal of Building 788. In order to facilitate the

Some volume of material (Conc structures) considered for in situ disposal i.e. OU4 Closure

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OU4 closure activities, it is assumed that the Subproject Baseline and Characterization and the D&D Engineering and Implementation Planning project phases must be completed in FY94 in order to support removal actions in FY95.

3. An agreement between DOE, the U.S. Environmental Protection Agency (EPA) and the State of Colorado Department of Health (CDH) must be negotiated or the existing RFP Interagency Agreement (IAG)[1] must be expanded to resolve potential regulatory agency oversight issues for those D&D subprojects which currently are not addressed within the IAG. It is assumed that input outside of the D&D program will be required to resolve this potential issue. Also, it assumed that CDH has approval authority of the Building 788 D&D subproject under their jurisdiction over state RCRA programs, since Building 788 is listed under the RFP Revised RCRA Hazardous Waste Permit Part A Application for 'Combined Hazardous Waste, Low Level Mixed Waste, TRU[2] Mixed Waste, and Mixed Residue Units' (Revision 10, October 1992).

4. Post D&D closure care is expanded in D&D Remediation Plan.

1.3 Purpose and Scope

The EG&G Statement of Work (SOW) for Building 788 and Ancillary Equipment Removal Planning, dated August 30, 1993, requested support for planning D&D activities for the RFP, especially for Building 788. The SOW is divided into two phases with various tasks associated with each phase. Phase 1 includes identifying the general tasks required to implement D&D activities for both the RFP on a site-wide basis and a project specific basis for Building 788. Phase 2 is for actual completion of the scoping and planning activities identified during Phase 1. This document is being submitted to fulfill the Phase 1 Tasks 1 and 2 which includes developing an overall Integrated Process Work Flow Diagram for the site-wide D&D program and defining the primary FY94 work elements for the removal of Building 788.

The Integrated Process Work Flow Diagram (SOW Task 1A) is provided as Figure 1. This diagram and identifies the major elements and decisions that are required to support the site-wide D&D program. The flow diagram was divided into six major functions (time-based project/program phases) which reflect the primary requirements for D&D programs as identified in DOE Order 5820.2A and other guidance documents. These divisions include: 1) D&D Program Planning; 2) Subproject Baseline and Characterization; 3) D&D Engineering and Implementation Planning; 4) Procurement and Contractor Selection; 5) Remediation/D&D Operations; and 6) Post-Decommissioning

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[1] The IAG is the regulatory agreement signed by the RFP site DOE office, EPA Region VIII, and CDH. This document was negotiated and signed to implement the provisions of CERCLA, RCRA, and other related environmental regulations as specified.

[2] Transuranic

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Activities. The key elements and decisions associated with each project phase are identified on the flow diagram and are discussed in Sections 2 to 7 of this document.

The flow diagram in Figure 1 and the corresponding text is intended to provide the framework for the development of a Project Management Plan to address site-wide D&D activities at the RFP. This framework is anticipated to evolve during the Phase 2 activities as additional information and planning guidance become available.

The specific work elements (SOW Task 1B) and FY94 planning support activities (Task 2) for the D&D of Building 788 are addressed in Section 8. The overall objective of this planning activity is to use the systematic approach presented in the Integrated Process Work Flow Diagram to identify and prioritize the work that should be performed in FY94 to support the near term D&D of Building 788 and its ancillary equipment.

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① RFO Function - EG&G ops procedure split out

2.0 D&D PROGRAM PLANNING

The primary D&D program elements and decisions (as identified on Figure 1) during the D&D Program Planning project phase include: 1) Generating a master list of surplus facilities; 2) Preparing a D&D Project Management Plan; 3) Developing and maintaining a Five-Year Plan; and 4) Providing project authorization. The activities related to each of these program elements are further described in the individual subsections that follow.

2.1 Master List of Surplus Facilities

DOE Order 5820.2A requires that each DOE field organization must prepare and maintain a complete list of contaminated facilities (both operational and excess). At RFP, this list of facilities is maintained by DOE-RFO in order to identify and assign decommissioning responsibility to the appropriate responsible manager. In order to implement these requirements for facility inventory and to establish the D&D program goals, DOE-RFO (with support from EG&G) must conduct programmatic actions, including:

- Establishing and maintaining a master D&D schedule[3];
- Transferring landlord responsibility from operations to D&D programs;
- Developing waste management strategies;
- Evaluating existing D&D technologies and developing specific applications at RFP;
- Establishing free-release criteria; and
- Identifying ultimate material disposition.

The surplus facility inventory will be used for developing a master plan for all D&D subprojects (i.e., the phasing of overall D&D activities). The ultimate land use of the RFP, utilization of facilities to facilitate D&D operations or other restoration programs, and the need to maintain utility services for on-going plant operations need to be considered when developing the master schedule.

One component of the surplus facility list is the formal transfer of landlord responsibilities from the specific plant operations manager to the D&D project management. As specified in DOE Order 5820.2A, Chapter V, 3.a.(5), contaminated facilities may be transferred from one program organization to other by mutual agreement of the programs involved. The program organization to which the contaminated facility is transferred is required to accept full responsibility for

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[3] Contingent on the site Transition Planning

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surveillance, standby operations, maintenance, and decommissioning of the facility. In addition to providing sufficient funding for D&D operations, the D&D project manager would also be responsible for any maintenance activities, once the transfer takes place, until D&D is complete. As part of the transfer process, a walkdown of the facility should be conducted (utilizing a prepared turnover checklist) to assess facility conditions, regulatory compliance, and operating/maintenance requirements.

In addition to master planning, the surplus facility inventory could be adapted to facilitate waste management and minimization activities. This activity involves developing waste management strategies for the waste streams that are expected to be generated as a result of D&D operations. The waste streams would be grouped into management categories based on similar contamination characteristics and processing requirements. These groupings will be primarily driven by regulatory requirements, technology constraints and economic considerations. Existing D&D technologies should be evaluated for their potential application at the RFP. This evaluation may involve further development or refinement of the technologies to meet the specific needs of the RFP by initiation of treatability studies and/or demonstration subprojects. These pilot activities could also be used to provide training of site D&D workers.

The waste management strategies should also consider waste minimization by reusing and recycling excess property where practical by expanding the list of surplus buildings to include an inventory of excess equipment and materials. This inventory would be managed through the DOE Excess Property Management System. To ensure that the equipment and material released for uncontrolled public use is safe, it is essential that free-release/reuse criteria be established. As applicable, strategies for waste treatment, packaging, minimization, volume reduction, and shipping/transport should be included.

In order to complete the waste management strategies, provisions for an ultimate disposal facility needs to be provided. Since the decision process involves a number of non-D&D entities, early resolution of this issue is required to avoid schedule delays and D&D program cost escalations.

Surplus facility management and waste management strategies could benefit from the implementation of a Systems Engineering/Integration approach. Such an approach to D&D planning could integrate the elements of D&D operations specified in DOE Orders

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and directives (e.g., DOE Order 5820.2A, Sec. V) and guidance extracted from Nuclear Regulatory Commission guidance (e.g., 10 CFR Parts 30, 40, 50, 51, and 72, and various NUREGS) with the system of project management established by DOE Order 4700.1. Since the program requirements for D&D at DOE facilities have not been completely developed and implemented for all field office requirements, the Systems Engineering/Integration approach inherently would involve a graded approach to the development of documentation and the application of directives.

2.2 DOE-RFO Five-Year Plan

The Five-Year Plan represents the long-range planning action for ensuring the proper allocation of funds. This budget cycle includes:

- Establishing and maintaining a master D&D budget, and
- Preparing Activity Data Sheets.

The inventory of surplus buildings and equipment described in Subsection 2.1 also forms the basis for assembling budgets to obtain required funding to execute the D&D program. The budget cycle is initiated with the development of the Five-Year Plan and is carried forward with the submission of annual budget requests for specific subprojects. The quantity of the information used to develop the budget estimates is a critical factor in ensuring that sufficient funds are available when required and to provide the justification for the funding. Activity Data Sheets will be used as the information resource for developing the budgets. The format and content of the Activity Data Sheets should be supplemented, if required, to ensure that D&D program needs and goals are properly funded.

2.3 Project Authorization

The DOE D&D budget cycle terminates with the receipt of project (the term 'subproject' is more appropriate in the case of RFP D&D efforts) funding at which time subprojects may be initiated. The approval for expenditure of budgeted funds represents the final subproject authorization. It is assumed that subproject authorization will provide the authority required to recycle, dismantle, and/or reuse DOE facilities and equipment. A formal subproject authorization mechanism (including requirements for subproject

baseline management and control) will be required to ensure that funds are controlled and are utilized for the purpose intended.

Documentation may be required for submittal in support of project/subproject authorization. The DOE Project Management System (DOE Order 4700.1) provides guidance for project authorization documentation. Most EG&G ERP projects will be managed under the specific requirements established for Major System Acquisitions; however, the basic information required by the project management system for general project management may be applied. The D&D Manager must determine the level of detail and format appropriate on a task-by-task basis for the documentation of the following:

- Support of the ERP D&D mission
- Subproject objectives
- Preliminary cost baseline
- Preliminary schedule baseline
- Preliminary technical baseline
- Subproject risk analysis
- Identification of subproject organization
- Work breakdown structure

Factors which determine which organizations or individuals must approve or authorize a subproject include, but are not limited to cost, funding, safety issues, required input from external organizations, schedule limitations, high project risks, and impending regulatory issues.

2.4 D&D Project Management Plan

The final major element of D&D Program Planning is the development of a D&D Project Management Plan (PMP). This management plan provides the overall procedures and guidelines for implementation of the D&D program. The Subproject Management Plan for specific D&D tasks should serve as a subtier document to the D&D PMP. The D&D PMP should address the requirements for:

- Determining the regulatory oversight requirements;
- Developing a Quality Assurance Program Plan;

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- Establishing procedures for the transfer of landlord responsibilities and other program level activities; and
- Identifying resource and interface requirements, both for organizational needs (e.g., staff) and facilities/equipment (i.e., development of new D&D facilities, the purchase of support equipment such as monitoring devices and computers,etc.).

Of the above listed items, defining the regulatory oversight requirements is a key issue which will require review of existing agreements and regulations, and developing and negotiation a position for regulatory oversight between DOE, EPA and CDH. Since reaching an agreeable position involves a number of non-D&D entities, early resolution of this issue is required to avoid schedule delays and D&D program cost escalations.

As applicable, the D&D PMP should address the development of engineering designs, cost estimates and safety documentation in accordance with applicable DOE Orders such as 4700.1, 6430.1A, and 5480.23.

3.0 SUBPROJECT BASELINE AND CHARACTERIZATION

Following the establishment of the program components, the development of plans for implementation of individual subprojects can commence. The Subproject Baseline and Characterization division of the Integrated Process Work Flow Diagram includes preparation of plans and completion of activities, including: the Subproject Management Plan; Facility Operation History; Baseline Characterization Plan; and Facility Characterization.

3.1 Subproject Management Plan

The Subproject Management Plan (SMP) is prepared to establish the baseline scope, cost and schedule for the implementation of a specific D&D subproject. This plan also provides the Work Breakdown Structure and identifies the subproject organizational responsibilities for the entire duration of the subproject (e.g., through project closeout). Any subproject specific QA requirements will also need to be addressed in this plan. The development of this plan will also mandate an environmental review process which is intended to provide early identification of any regulatory issues and permitting requirements for incorporation into the subproject's scope, schedule and budget.

As presented in DOE Order 4700.1, a Project Management Plan (PMP) is a document that establishes the plans, organization, and systems that the responsible manager will utilize. This is the intended function of the SMP within D&D project activities. The content and extent of detail of the PMP (and the SMP) will vary in accordance with the size, complexity, and type of project. In general, a PMP should contain the following data and sections:

1. Introduction and Overview
2. Objectives
3. Management Organization and Responsibilities
4. Work Plan
5. Work Breakdown Structure
6. Schedule
7. Logic Diagrams
8. Performance Criteria
9. Cost and Labor Estimates
10. Project Functional Support Requirements

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11. Project Management, Measurement, and Planning Control Systems
12. Information and Reporting
13. Systems Engineering Management
14. Configuration Management
15. Contingency
16. Quality Assurance
17. Utility Services
18. Responsibility Matrix
19. Approval, Review and Concurrence

This outline of information should be applied (using a graded approach) when developing a D&D SMP. The information developed in the D&D SMP will be primary input for the subsequent development of the Decommissioning Subproject Plan.

All information contained in the Subproject Management Plan will need to be consistent with the constraints and requirements specified in the D&D Project Management Plan.

3.2 Facility Operation History

As a component of developing the Subproject Management Plan, information regarding the operational history of the facility will be reviewed to assess the nature and extent required of D&D activities, including worker protection requirements. The goal of this effort has two components. The first goal of the review is to obtain as much information about the facility as possible early in the planning stages to allow the subproject scope, budget and schedule to be concisely defined. If it is determined that additional information is required, the second goal of the review to precisely identify the data requirements for the development of a Baseline Characterization Plan.

3.3 Baseline Characterization Plan

Once the data requirements have been identified, a Baseline Characterization Plan can be developed to obtain the missing information to support engineering and implementation of the D&D subproject. The characterization plan will include the establishment of Data Quality Objectives to ensure that the information obtained will be of a quality to meet subproject requirements. A Field Sampling Plan and Quality

Check difference between 3.3 & 3.4

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Assurance Subproject Plan which defines the sample locations and the sample collection and analytical procedures will be included as a component of the Baseline Characterization Plan. To ensure proper protection of the field characterization team, existing Health and Safety procedures and plans will be reviewed and amended as needed to address any specific hazards associated with implementing the Baseline Characterization Plan.

3.4 Facility Characterization

Following approval of the Baseline Characterization Plan, the facility characterization activities will be initiated. The characterization activities include sample collection, laboratory analyses, data validation and data management. The characterization results will be used to select the appropriate decontamination methods, to classify the waste materials into the correct management categories, and to determine the extent of decontamination required to achieve subproject clean-up goals. The evaluation of the analytical results will be factored into the development of the D&D engineering and implementation plans.

4.0 D&D ENGINEERING AND IMPLEMENTATION PLANNING

The work elements associated with D&D Engineering and Implementation Planning (ref. Figure 1) include: 1) Preparation of the Decommissioning Subproject Plan for the facility; 2) Regulatory Integration; and 3) Procedures Preparation. These activities, as discussed in this section, are the basis for the completion of planning activities prior to initiation of D&D operations and field activities.

4.1 Decommissioning Subproject Plan

The Decommissioning Subproject Plan is a comprehensive plan that forms the basis for D&D activities to be performed at a given facility. A Decommissioning Subproject Plan will be prepared for each facility (or group of facilities) to be decommissioned. The Decommissioning Subproject Plan includes the following major activities:

- Technical Approach -- The technical approach to accomplishing the work is outlined in detail in the Decommissioning Subproject Plan. The technical approach will include the rationale for selected methods for decontamination of structures, equipment, and ancillary equipment, as well as a definition of potential future uses for a given facility of group of facilities. The selected technical approach is governed by future facility uses.

- Engineering Design -- Engineering design, including plans and specifications, for facility dismantlement and facility-specific support systems or equipment, and engineered designs for unique technology applications.

- Cost/Benefit Analysis -- Cost/Benefit Analysis of optional approaches to decontamination, dismantlement, and waste disposal. It may also be beneficial for facilities where future land uses have not been defined to perform a cost/benefit analysis for D&D options associated with various land use scenarios.

- Waste Management Plan -- A plan that describes wastes to be generated, waste volumes, contaminant levels, disposal criteria, waste minimization approaches, and waste disposal and transport criteria for contaminated and clean materials. Disposal methods for primary and secondary waste streams will be defined in the

Waste Management Plan. The Waste Management Plan will incorporate the waste management strategies defined in the D&D Project Management Plan defined in Section 2.

- Cost Estimates -- Definitive cost estimates for all D&D operations.

A National Environmental Policy Act (NEPA) review is conducted for DOE activities that may have an adverse impact on the environment and/or human health. NEPA directives require that appropriate documentation be prepared. For most of the RFP D&D subprojects, NEPA documentation will most likely include preparation of a Categorical Exclusion (CATEX) or an Environmental Assessment (EA). Depending on the complexity of the D&D activities, the NEPA documentation will be prepared and incorporated into the Decommissioning Subproject Plan, or will be prepared as a stand-alone document. Based on DOE directives (e.g., DOE Order 5440.1E), NEPA documentation must be reviewed and approved by DOE-Headquarters.

Safety documentation typically will be required for each D&D subproject. The level of safety documentation required depends on several factors including potential off-site impacts from a release of radioactive material during operations, potential worker exposure, and the risks associated with the D&D activities. Safety documentation for D&D activities at Rocky Flats may include preparation of documentation such as: a Hazards Analysis Document/Report; a Safety Assessment; Preliminary and Final Safety Analysis Reports (PSAR and FSAR), or other similar documentation. If it is determined that the D&D operations do not pose a significant safety risk to workers or the public, the safety documentation may be incorporated into the Decommissioning Subproject Plan. If the safety documentation is extensive, it should be issued as a separate document. Safety documentation must be approved prior to implementation of D&D operations.

A procurement plan will be included in the Decommissioning Subproject Plan that outlines services and/or equipment to be procured. Long-lead procurement items will be identified in the plan.

An Emergency Response Plan will be required as part of the Decommissioning Project Plan. The Emergency Response Plan outlines the actions to be taken in the event of an emergency, including notification requirements, immediate actions to be taken, and

subsequent procedures to be followed. Each person working on the project should be familiar with the contents and actions in the plan.

4.2 Regulatory Integration

Facilities at the Rocky Flats Plant will be governed by three major environmental regulations: the Rocky Flats Interagency Agreement (IAG); the Resource Conservation and Recovery Act (RCRA); and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The IAG governs the remedial actions associated with the 16 operable units (OUs) at the plant. The IAG integrates the requirements of both RCRA and CERCLA for various site remedial activities. Several of the facilities that will undergo D&D at the site will require integration of IAG requirements and schedules with D&D activities and schedules. This is of particular importance to those facilities associated with the OUs inside the Protected Area (PA).

Portions of many of the buildings that will undergo D&D are included in the Rocky Flats Plant RCRA Part A and Part B permit application. The regulated portions of these facilities may require closure under RCRA. Closure activities will be integrated with D&D requirements during preparation of the Decommissioning Subproject Plan.

It is possible that D&D activities at all DOE sites could eventually be required to include the remediation requirements and directives of CERCLA. In the event that a facility or facilities are decommissioned under CERCLA, integration of CERCLA requirements and negotiations with the EPA will be required on a case-by-case basis for all D&D subprojects.

4.3 Procedures Preparation

Prior to implementation of D&D activities, specific procedures must be prepared that are specific to the facility and actions in question. These procedures could include:

- Procedures for residual waste removal activities for wastes contained in process equipment, tanks, piping, sumps, drains, and other locations;

- Procedures for stored waste container removal activities for waste stored in drums, boxes, or other containers;

- Procedures for implementation of decontamination techniques including contact and non-contact methods for equipment, building structures and surfaces, piping, tanks, and other ancillary equipment;

- Procedures for decontamination verification sampling for equipment and building surfaces, rinsates, and decontamination fluids for both radioactive and nonradioactive contaminants;

- Procedures for dismantlement and size reduction procedures for building structures, vessels, piping, utilities, and other ancillary equipment;

- Procedures for waste sampling and analysis for disposal or storage determinations;

- Radiological control procedures to be employed during decontamination and dismantling activities;

- Waste packaging and transportation procedures; and

- Procedures for verification sampling and analysis following facility D&D.

Other facility-specific procedures may be prepared to address issues such as criticality control, contaminant containment and dose control, and safeguards and security for special nuclear material. In general, the amount of detail required in the procedures will be governed by the complexity of the operation.

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5.0 PROCUREMENT AND CONTRACTOR SELECTION

5.1 Procurement

As soon as the final engineering and implementation planning has been completed, the D&D Manager should initiate the procurement of items and services that have been identified as required for the D&D efforts. In the instance of long-lead procurement items, this process should be initiated as soon as the specific requirements can be established. Preliminary D&D engineering should provide identification of long-lead procurement items which might affect the project, and should address the development of firm D&D operations and procurement schedules.

Specific procurement project elements include:

- Preparation of procurement plans;
- Identification of long-lead procurement items;
- Development of outline specifications for equipment procurement;
- Development of detailed cost of procurement estimates;
- Development of final specifications for procurement; and
- Procurement of goods, materials and services.

5.2 Subcontractor Selection

Prior to initiating the D&D Operations project phase, it may be necessary (depending on the nature and extent of the D&D project) to procure the services of a subcontractor to perform remediation/removal activities. The subcontractor selection process involves a subcontract administrator, or subcontracting officer, who is the EG&G representative authorized to enter into and/or administer contracts and to make determinations and findings concerning them.

As with any typical project, D&D remediation/removal services subcontracts are awarded based on a technical evaluation of the credentials of the prospective subcontractor. The technical evaluation, conducted by selected engineers or other technical personnel, is of proposals that have been submitted in response to an Issue For Bid (IFB) or Request For Proposal (RFP). Such evaluations have two purposes: 1) To determine whether the

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proposed subcontractor labor/material estimates will properly meet the performance/ schedule objectives of the contract, and 2) To evaluate the cost of the specific elements and tasks put forward by the subcontractor. Analysis by technical personnel includes a qualitative and quantitative evaluation of such elements as labor hours, materials, equipment, computer usage, travel expenditures, and other direct charges, as appropriate.

Technical evaluation reports should contain information summarizing the following: what was analyzed; how it was analyzed; and conclusions in sufficient detail to support preparation of the negotiation objective and the ensuing negotiation. On major procurements it is important that the technical evaluation report be organized and tailored to the particular circumstances of the contract. For this reason, the contents of technical evaluation reports will vary, according to circumstances.

5.3 Training

As part of subcontractor selection and preparation for remedial/removal field activities, the D&D Manager is responsible for arranging, coordinating, and participation in training of site personnel and contractors/subcontractors as required by regulatory and site directives. This training should be in accordance with the requirements specified in subcontractor conditions for site work, which should include CERCLA/RCRA/NEPA training requirements.

The instigation of training includes the development of Training Plans and/or Lesson Plans. In determining the requirements for Training Plans, the project training goals should include:

- Education in principles;
- Enhancement of skill and practices;

The aim of training is to bring about:

- An understanding of the process;
- An understanding of the tools used in the process;
- An understanding of the variability of tools and processes that may arise in actual field practice.

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29 CFR 1910.120 ?

Hazardous materials compliance training is to be provided (as per the requirements of 49 CFR) for persons responsible for hazardous materials packing and transportation operations. Also, the D&D Manager must provide training for radioactive materials handling. Site personnel involved in packaging, loading, and handling of hazardous wastes are to have participated in RCRA Hazardous Waste Operations Training.

Safety requirements must be met by the implementation of Industrial and Radiological Training, which includes:

- Industrial Hygiene
- Safety and Fire Protection Engineering
- Radiological Safety
- Emergency Response and Reporting

The D&D Manager should ensure that each worker has received the appropriate Health Physics Training for working in radiation areas. Radiological/nuclear safety and control directives may be derived from DOE/EV-0263T, DOE Order 5400.5, and DOE Order 5480.11. Radiological safety training should include specific training to support the concept of ALARA as specified in DOE/EV/1830-TS. Elements of radiological training that are of particular importance are:

- General employee radiological training;
- Radiological worker (Worker I and Worker II) training;
- Specialized radiological worker training;
- Requirements for Radiological Control Technicians;
- Training for specialized facilities (e.g., plutonium, uranium, and/or tritium facilities); and
- Other radiological training and awareness programs.

In conjunction with procurement, the D&D Manager should ensure that copies of vendor data are maintained for use in the preparation of procedures and training materials. Also, when conducting project budgets, the D&D Managers should consider the one-time costs related to operator and worker training.

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5.4 Facility and Site Preparations

Certain preparations should be conducted on the facility and adjacent site in preparation for D&D operations and field activities. These preparations include:

1. Construction/installation of temporary structures required to support field activities.
2. Establishment of access roads, ramps, portals.
3. Designation of a laydown area, including storage areas and working areas, to support disassembly and construction actions.
4. Establishment of office facilities for managerial, technical, and construction staff.
5. Connection of support utilities (e.g. water, electricity, sanitary water) to provide continued service throughout D&D operations.
6. Coordination with site organizations and services to be impacted.

6.0 REMEDIATION/D&D OPERATIONS

6.1 D&D Operations

D&D operations include decontamination, dismantlement, disassembly, packaging, storage, and disposal of facility structures, components, systems and equipment. These activities should be conducted in compliance with the Decommissioning [Sub]Project Plan established in the D&D Engineering and Implementation Planning project phase.

The D&D Manager should ensure that prior approval for demolition of a DOE-owned facility has been obtained from DOE-RFO (with concurrence from the DOE MA-22 Headquarters organization), in accordance with DOE Order 4300.1C.

Typical elements and considerations for D&D operations include:

Removal of Radioactive Equipment

- Decontamination to the extent possible
- Isolation of system and cutting pipe (radioactive)
- Sampling and characterization of radioactivity
- Size/volume reduction
- Removal and packaging
- Onsite transportation
- Offsite transportation

Removal of Nonradioactive Equipment

- Segmentation and removal of large vessels and components
- Removal of other equipment
- Verification of uncontaminated status
- Size/volume reduction
- Packaging and transportation
- Salvage or disposal

Major Systems Removal

- Segmentation and removal of large vessels and components
- Removal of other equipment
- Verification of uncontaminated status
- Size/volume reduction
- Packaging and transportation
- Salvage or disposal

Removal of Power and Control Systems

- Decontamination
- Operations interfaces
- Switch-over to construction/auxiliary power
- Verification of uncontaminated status
- Salvage or disposal

Removal of Contaminated Concrete and Porous Materials

- Walls, floors, and structures
- Removal controls
- Removal methods

Demolition and Removal of Structures

- Removal of contamination
- Removal techniques
- Verification of uncontaminated status
- Salvage or disposal

Scrap or Salvage of Materials

- Criteria established
- Health physics assessment and controls
- Size/volume reduction

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- Salvage or disposal process
- Decontamination cost/benefit analysis

D&D operations should incorporate the requirements for radiological controls as presented in DOE/EH-256T. These include:

- Implementation of radiological standards;
- Methods of conduct of radiological work;
- Handling of radioactive materials;
- Interfacing with radiological health organizations;
- Radiological training and qualification; and
- Maintenance of radiological records.

Decontamination activities are an integral part of D&D programs that involve radiologically-contaminated equipment and materials. Elements of decontamination activities include:

- End-product criteria and objectives
- Chemical cleaning
- Systems flushing
- Nonchemical (physical) decontamination
- Specification of surface contamination levels
- Partial removal of components
- Cost/benefit analysis for further decontamination

Decontamination operations for surplus equipment (for reuse, disposal, and/or recycling) and the decontamination of structure surfaces (e.g, walls, floors) should comply with the applicable requirements of DOE Orders 5400.5, 5480.11, and 5820.2A.

When dealing with the removal of heavy components, certain safety and health protection requirements should be including in work plans. These requirements should include such topics as: rigging/scaffolding safety; physical construction; crane safety; access requirements; worker protection; and occupational/industrial safety.

Status reports on ongoing and planned D&D operations should be prepared and forwarded to DOE-RFO in accordance with the applicable requirements of DOE Order 4700.1 and/or DOE Order 1332.1A.

6.2 Waste Management Operations

Waste management operations should implement the directives of the Facility Waste Management Plan prepared in the Engineering and Implementation Planning project phase. Prior to commencing field operations and D&D remediation/removal, the D&D Manager should ensure that anticipated types, quantities, and dose rate ranges (as applicable) of waste materials have been identified, including estimates for radioactive, mixed (radioactive/hazardous), hazardous, and nonradioactive materials. Projected/expected disposition of these materials also should be specified with respect to treatment, salvage, packaging, interim storage, transportation, and disposal.

D&D Operations should be considered as a waste generator, and shall meet the requirements of 40 CFR 262, as well as applicable DOE Orders and requirements. This applies to hazardous and radiological mixed wastes, as delineated in the EPA/DOE Memorandum of Understanding dated Feb. 22, 1984.

Primary elements and considerations for waste management operations include:

Liquid Radwaste Processing

- Present capacity and capability
- Additional services needed/required
- Solidification

Solid Radwaste Handling, Packaging, and Disposal

- Low specific activity (LSA) containers and casks
- Packaging and transportation
- Disposal
- Interim storage/staging

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Radioactive/Hazardous Mixed Waste

- Stabilization
- Packaging and transportation
- Disposal

Nonradioactive Hazardous Waste Handling and Disposal

- Transportation
- Disposal or stabilization

Clean Waste Handling and Disposal

- Identification of laydown areas
- Traffic management of waste site
- Local landfill site

Information on the wastes generated during D&D operations is to be provided as input to the DOE Integrated Data Base Program.

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7.0 POST-DECOMMISSIONING ACTIVITIES

7.1 Final Surveys

After the completion of remedial/removal activities and related D&D operations, A final radiological and chemical survey (or an independent verification survey) report should be prepared. This final survey should include:

- Sampling and statistical analysis
- Environmental monitoring
- Establishment of a survey plan and schedule for dormancy
- Confirmation that structures meet disposition objectives
- Evaluation of allowable residual contamination

Field verification of D&D activities should be conducted in a manner that addresses the requirements of DOE Order 4700.1 and DOE Order 5820.2A.

7.2 Final Report

The activities involving facility release and reporting lead up to the development of a final report of the D&D action. These activities are intended to verify that the D&D objectives of the subproject have been met. The report should provide (as appropriate) certification of unrestricted level for release of site and structures.

After the final surveys and the survey report have been completed, a project final report should be prepared. This report should include a description of the project, the final status of the property, and the lessons learned from the project.

7.3 Project Closeout

The closeout of a project involves a number of steps required to ensure the proper termination of project activities. These steps include: the completion of all contractual relationships; the closing of contracts for file; closing out financial records and documents; obtaining necessary approvals, licenses, and permits; completing the safety analysis reports; establishing operating procedures; and other activities peculiar to the

project. Preparation of a project closeout checklist is recommended to assist the D&D Manager in verifying completion of all closeout activities.

Closeout activities should include the restoration of the site (as identified within the scope of D&D operations), which may involve removal of site boundary structures, grading, landscaping, and facility/site closure.

A topic of consideration for project termination is the disposition of unused or reusable equipment, supplies, and/or hardware. While there is no set policy for dealing with disposition, it is preferable if the project products can be disposed of with the contractor(s) involved. Even if sold at a loss, the situation may be preferable to future storage, maintenance, or other non-usage costs. The D&D Manager is to determine the appropriate course of action as soon as possible, once project termination is imminent.

The D&D Manager should coordinate with the DOE-RFO office to prepare a Subproject Data Package in accordance with DOE Order 5820.2A, Sect. V. This Subproject Data Package should include (as a minimum):

- The Record of Completion;
- The final radiological and chemical survey report;
- The Subproject Final Report; and
- Appropriate public notices (if applicable).

These documents are to be retained permanently in the DOE archives.

7.4 Post-Closure Care

The decommissioned property may be released from DOE ownership without additional care according to the requirements of DOE Order 4300.1C, if DOE-RFO (in conjunction with DOE-Headquarters) certifies that the property meets the applicable release criteria for free release, residual radioactivity, and/or residual hazardous chemicals. The property then will be identified by notation in the legal land records of the appropriate state government organization.

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The decommissioned property may be reused for other DOE activities that may or may not involve radioactive and/or hazardous chemicals. If appropriate or applicable release criteria are not met, the property may be used for other activities provided that adequate safety and health protection controls are observed and maintained.

When closing facilities identified as Hazardous Waste Management Units under RCRA, the RCRA Closure Plan will identify the requirements for Post-Closure Care (as defined by RCRA, and addressed by 40 CFR 264.111). The Closure Plan describes the project activities related to closing a particular operation or facility involving the removal of hazardous substances, wastes, or constituents. The plan addresses the processes to be used for the closure that will ensure that when the hazardous substances, wastes, or constituents are removed, the operation/facility will no longer be a concern under the requirements of RCRA. If all of the RCRA constituents can be removed, no further care and monitoring is required. If RCRA constituents remain in place, additional institutional care may be required.

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8.0 BUILDING 788 FISCAL YEAR 1994 PLANNING

In response to Section 4.3 of the Statement of Work (SOW Task 2), this section describes the general planning requirements for D&D efforts in Fiscal Year 1994 (FY 94) relative to Building 788. For the purpose of outlining work to be completed in FY 94, it is assumed that Procurement and Contractor Selection, Remediation/D&D Operations, and Post-Decommissioning Activities will be completed after FY 94.

The generalized FY94 D&D process for Building 788 and ancillary equipment is depicted in Figure 2. The Work Element Definition Sheets that key to the work elements defined in Figure 2 are provided as Attachment A.

8.1 Subproject Baseline and Characterization

For Building 788, this work element consists of preparation of the following documents:

- Subproject Management Plan;
- Baseline Characterization Plan;
- Health and Safety Plan; and
- Subproject Quality Assurance Plan.

A description of the scope, contents, responsibilities, and other considerations for each of these deliverables is provided below:

Subproject Management Plan

The Subproject Management Plan (SMP) establishes the project baseline scope, cost, and schedule for the D&D of Building 788. The SMP will also define the roles and responsibilities of organizations and personnel involved with the planning, scoping, management, engineering, and implementation of the D&D activities. A WBS will be established in the SMP that will form the basis for management and control of the Building 788 budget and schedule. The subproject scope, including the extent of the decontamination or dismantling operations, is detailed in the SMP.

Regulatory considerations for D&D of Building 788 will be examined in the SMP. Building 788 is listed in the Rocky Flats Plant RCRA Part A Permit Application as an Interim Status storage facility. D&D of Building 788 will require integration of RCRA closure requirements with D&D activities. A regulatory analysis that examines the RCRA requirements and integrates these requirements with the D&D activities will be contained in the SMP.

The SMP will provide an overview of D&D operations related to the removal of Building 788 in order to provide a basis for the baseline budget and schedule. As part of planning for D&D of Building 788, an activity baseline schedule outlining the integration of D&D activities with the Operable Unit No. 4 (OU4) Interim Measures/Interim Remedial Action (IM/IRA) will be established. A critical path schedule and time-phased logic diagram for follow-on activities will be established.

A Subproject Quality Assurance Plan will be prepared and used to define QA activities for subproject activities. Quality levels for activities such as studies, engineering, sampling and analysis, and verification and testing will be outlined in the plan. The QA plan should be based on the NQA-1 program. The QA plan will use a graded approach to establishing review and verification of the various subproject activities. The QA plan will also outline other QA programs, such as EPA QAMS-005, that may be applicable to aspects of the project such as sampling and analysis of hazardous contaminants.

A subproject Health and Safety Plan (H&SP) will be prepared that outlines the worker protection requirements and procedures for D&D operations. The H&SP will define the site-specific training required to accomplish D&D activities, and outline specific procedures to be followed, including radiological protection procedures and occupational safety procedures.

Baseline Characterization Plan

The Baseline Characterization Plan will define preliminary characterization activities that must be accomplished to support engineering and implementation activities. Historical operating records will be reviewed and will provide a basis for the definition of contaminants to be analyzed for. The Baseline Characterization Plan will consist of the following sections at a minimum: Introduction and Objectives; Facility Operating

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History; Sampling and Analysis Plan; Quality Assurance and Quality Control; and Data Management Procedures. The Baseline Characterization Plan will identify sampling locations and basis for their determination, sampling methodology, quality control sampling and rationale, and analytical methods for both radiological and hazardous contaminants.

The baseline characterization results are used to define the decontamination methods appropriate to facility and ancillary equipment (as necessary), to determine potential waste and waste residue disposal options, and to determine when decontamination operations have been completed. The baseline characterization plan must be implemented prior to evaluation of decontamination technologies and selection of waste disposal options.

Review of historical operations and past processing records will be used to define what components, structures, and ancillary equipment are to be included in the decontamination and/or decommissioning of Building 788. This document should establish the extent of the facility boundaries included in the D&D effort, as well as define the operating history of Building 788. The history should focus on information that supports the determination of what contaminants may be present and should included in the baseline characterization and sampling during decontamination operations. The review should be of sufficient detail to allow the inclusion of contaminants of concern or dismissal of those contaminants that are determined to not be present based on process knowledge. Sufficient detail on the facility inventory should also be presented to allow an engineering evaluation of D&D methods appropriate to the facility and associated ancillary equipment during D&D Engineering and Implementation Planning.

8.2 D&D Engineering and Implementation Planning

The D&D Engineering and Implementation Planning task includes the following task elements: Decommissioning Subproject Plan; Regulatory Integration; and Procedure Preparation.

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Decommissioning Subproject Plan

The Decommissioning Subproject Plan is a comprehensive plan that forms the basis for D&D of Building 788. Included in the Decommissioning Subproject Plan are:

- Technical approach and rationale for selected methods for decontamination of equipment and structures, equipment, and ancillary equipment;
- Engineering design, including plans and specifications, for facility dismantlement and facility-specific support systems or equipment;
- Cost/Benefit Analysis of optional approaches to decontamination, dismantlement, and waste disposal;
- Building 788 Waste Management Plan that describes wastes to be generated, waste volumes, contaminant levels, disposal criteria, waste minimization approaches, and waste disposal and transport criteria for contaminated and clean materials;
- Definitive cost estimates for all D&D operations; and
- Free release criteria for decontaminated and clean materials;

As part of all DOE activities, a National Environmental Policy Act (NEPA) review is conducted and appropriate documentation is prepared. For the Building 788 D&D, potential NEPA documentation could include a Categorical Exclusion or an Environmental Assessment. The NEPA documentation will be prepared and incorporated into the Decommissioning Subproject Plan.

Safety Documentation will be required for the Building 788 D&D activities. At a minimum, a hazards classification will be prepared as a separate document that will categorize the Building 788 D&D activities as low, moderate, or high hazard. The hazards classification defines the need for additional safety documentation such as a Preliminary Safety Analysis Document (PSAD) or Preliminary Safety Analysis Report (PSAR). It is anticipated that for this project, additional safety documentation beyond the hazards classification will not be required.

A procurement plan will be included in the Decommissioning Subproject Plan that outlines services and/or equipment to be procured. Long-lead procurement items will be identified.

An Emergency Response Plan will be required as part of the Decommissioning Project Plan. Notification requirements and procedures will be identified and made available to all personnel associated with the Building 788 D&D.

Regulatory Integration

Building 788 is located within the boundaries of OU4, and must be dismantled prior to or along with implementation of the Solar Evaporation Ponds IM/IRA. In order to facilitate integration with the closure of the Solar Ponds, regulatory requirements for closure of Building 788, a RCRA storage facility, must be defined in the context of the Solar Ponds closure. The regulatory agencies may have to concur with the technical approach to D&D and the approach to baseline characterization and verification sampling. It is probable that as the Solar Ponds IM/IRA progresses, regulatory requirements for the D&D of Building 788 will evolve as well.

Procedure Preparation

Prior to implementation of D&D activities, specific procedures will be prepared. These procedures will include at a minimum:

- Residual waste removal activities;
- Waste container removal activities;
- Decontamination techniques for equipment;
- Decontamination of building structures and surfaces;
- Decontamination verification sampling for equipment and building surfaces;
- Dismantlement of building structures, piping, utilities, and other ancillary equipment;
- Waste sampling and analysis requirements for disposal or storage determinations;
- Radiological control during decontamination and dismantling activities
- Waste packaging; and
- Verification sampling and analysis following facility D&D.

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8.3 Subsequent D&D Activities

The activities for the Building 788 project that are expected to occur subsequent to the planning phases include:

- Procurement and Contractor Selection
- Remediation/D&D Operations
- Post-Decommissioning Activities

A primary element of these activities will be the development of detailed cost estimates and schedules. In support of these activities, E&G must develop procedures that are to be transmitted to DOE-RFO for review and approval. Also, a subcontracting strategy must be developed that defines interfaces and responsibilities, division of work/labor, and contracting vehicles/mechanisms (e.g., time/materials contracting).

There is insufficient information available at this time to evaluate specific requirements for these project phases. However, it is anticipated that the requirements for these phases will reflect the generic processes described in Sections 5 through 7 of this document.

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ATTACHMENT A

BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEETS

Based on the project phasing depicted in Figure 2, the following Work Elements for FY94 actions are defined:

Project Phase 1.0: Subproject Baseline and Characterization

Work Element 1.1 - Subproject Management Plan

Work Element 1.2 - Facility Operating History

Work Element 1.3 - Baseline Characterization Plan

Work Element 1.4 - Facility Characterization

Project Phase 2.0: D&D Engineering and Implementation Planning

Work Element 2.1 - Decommissioning Subproject Plan

Work Element 2.2 - Regulatory Integration

Work Element 2.3 - Procedures Preparation

The detailed explanations for these Work Elements are provided in the Work Element Definition Sheets included in this Attachment.

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 1.1

Work Element Title: Subproject Management Plan

Description of Work Element: The Building 788 D&D Subproject Management Plan (SMP) outlines the baseline budget, scope, schedule, and roles and responsibilities for the work. The SMP will also contain the subproject Work Breakdown Structure, regulatory analysis, Quality Assurance (QA) plan, and Health and Safety Plan (H&SP).

Deliverables: Building 788 D&D SMP

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to ensure that the SMP is prepared in accordance with EG&G guidelines and procedures, and to ensure that the pertinent portions of the SMP are reviewed and approved by the responsible EG&G organizations. It is also the responsibility of the EG&G Project Manager or his designated representative to ensure that the SMP scope and regulatory requirements are integrated with ongoing OU4 RFI/RI and IM/IRA efforts.

Off-site Interfaces: Contact with radioactive waste disposal facilities such as the Nevada Test Site (NTS) may be required to establish Waste Acceptance Criteria for waste produced during D&D activities that may be disposed of off-site.

Required Procedures: None

Required Training: None

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Regulatory Interfaces: Interface with EPA and CDH will be required to define and resolve regulatory issues associated with the Building 788 RCRA Closure and D&D.

Key Decisions: The following key decisions are associated with the SMP:

- RCRA Closure requirements for Building 788
- Waste disposal location (on-site vs. off-site)
- Facility D&D boundaries

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 1.2

Work Element Title: Facility Operating History

Description of Work Element: The Building 788 Facility Operating History work element consists of examination of past and present operations to establish contaminants that may be present, extent of contamination, and regulatory basis for D&D. The information from the evaluation of past and present operations will allow preparation of the Baseline Characterization Plan.

Deliverables: None

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to assure that adequate documentation and personnel with knowledge of Building 788 history are available for this effort. Definition of detailed historical information will require interviews with various EG&G organizations, including Operations, Radiological Engineering, Regulatory Analysis, and Environmental Restoration Management.

Off-site Interfaces: None

Required Procedures: None

Required Training: None

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Regulatory Interfaces: Interface with EPA and CDH will be required to define and resolve regulatory issues associated with the Building 788 RCRA regulatory issues.

Key Decisions: The key decision associated with this effort involves the RCRA Closure requirements for Building 788

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 1.3

Work Element Title: Baseline Characterization Plan

Description of Work Element: The Building 788 Baseline Characterization Plan will outline sampling and analysis requirements for determining contaminant levels requiring decontamination and for establishing worker protection requirements during D&D activities.

Deliverables: Building 788 Baseline Characterization Plan

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to that the sampling and analysis strategies and procedures are consistent with EG&G guidelines and procedures. It is the responsibility of EG&G Quality Assurance organizations to ensure that the QA/QC protocol are consistent with the objectives of the work to be performed, and are also consistent with the EG&G/regulatory QA requirements.

Off-site Interfaces: None

Required Procedures: Sampling procedures for surface sampling for radioactive and hazardous contaminants. Other existing EG&G procedures for worker protection during sampling, and other waste sampling procedures should be adequate for the remaining characterization activities.

Required Training: None

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Regulatory Interfaces: None, however it is likely that EPA and CDH will review and approve the Baseline Characterization Plan.

Key Decisions: None

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 1.4

Work Element Title: Facility Characterization

Description of Work Element: Characterization of Building 788 will consist of sampling and analysis of residual wastes in the building that will remain following general facility housekeeping, and characterization of equipment, structures, and surfaces that may or may not be contaminated.

Deliverables: Facility Characterization Results Report

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to procedures defined in the Facility Characterization Plan are followed during characterization activities, and that results are interpreted accordingly. Analysis of collected will be completed at an on-site laboratory. It must be established whether the data will be entered into the Rocky Flats Environmental Data System (RFEDS).

Off-site Interfaces: None

Required Procedures: None

Required Training: Characterization personnel will be required to attend training as follows:

- General Employee Training
- Radiation Worker Training
- Building 788 Orientation Training
- Sampling Procedure Training

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Other training courses to be determined may be required.

Regulatory Interfaces: The regulatory agencies will review the Baseline Characterization Results Report.

Key Decisions: None

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 2.1

Work Element Title: Decommissioning Subproject Plan

Description of Work Element: The Building 788 Decommissioning Subproject Plan outlines all activities required to complete the D&D of the building, including required engineering, design, and waste disposition activities.

Deliverables: Building 788 Decommissioning Subproject Plan; Building 788 Free Release Criteria; Building 788 Waste Management Plan; NEPA Documentation; Hazards Analysis; Procurement Plan; Emergency Response Plan

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to ensure that the Decommissioning Subproject Plan is complete and accurately defines the nature of the work and that the technical approach to Building 788 D&D activities are sound. Reviews of the plan and associated documents will be required by various EG&G organizations including Quality Assurance, Central Engineering, Radiological Engineering, and Safety, and Environmental Restoration Management.

Off-site Interfaces: Contact with radioactive waste disposal facilities such as the Nevada Test Site (NTS) may be required to ensure that the waste anticipated to be generated can be accepted if off-site disposal is anticipated.

Required Procedures: None

Required Training: None

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Regulatory Interfaces: None

Key Decisions: Technical Approach to Building 788 D&D

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 2.2

Work Element Title: Regulatory Integration

Description of Work Element: This work element consists of ensuring that planning activities are consistent with the OU4 IM/IRA.

Deliverables: None

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to ensure that the Decommissioning Subproject Plan schedule is integrated with the OU4 IM/IRA. Frequent communication with the EG&G OU4 Project Manager will be required.

Off-site Interfaces: None

Required Procedures: None

Required Training: None

Regulatory Interfaces: The integrated approach to D&D of Building 788 and closure of the Solar Evaporation Ponds will require communication of the approach to the regulatory agencies.

Key Decisions: None

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EG&G Rocky Flats Environmental Restoration Project
BUILDING 788 AND ANCILLARY EQUIPMENT
FY94 REMOVAL PLANNING (PHASE 1)

WORK ELEMENT DEFINITION SHEET

Work Element Number: 2.3

Work Element Title: Procedures Preparation

Description of Work Element: This work element consists of preparation of procedures associated with decontamination and dismantlement of Building 788.

Deliverables: Residual waste removal activities; Waste container removal activities; Decontamination techniques for equipment; Decontamination of building structures and surfaces; Decontamination verification sampling for equipment and building surfaces; Dismantlement of building structures, piping, utilities, and other ancillary equipment; Waste sampling and analysis requirements for disposal or storage determinations; Radiological control during decontamination and dismantling activities; Waste packaging; Verification sampling and analysis following D&D

On-Site Responsibilities: It is the responsibility of the EG&G Project Manager or his designated representative to ensure that the procedures prepared under this work element are consistent with good engineering practices and EG&G guidelines.

Off-site Interfaces: None

Required Procedures: See above

Required Training: None

Regulatory Interfaces: None

Key Decisions: None

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REFERENCES

The following references were utilized or have been referenced in the preparation of this evaluation and report:

1. "Atomic Energy Act" (42 USC 2001, et seq.); U.S. Congress, 1954.

2. "Comprehensive Environmental Response, Compensation, and Liability Act of 1980" (P.L. 96-510), as amended by "The Superfund Amendments and Reauthorization Act of 1986" (P.L. 99-499); U.S. Congress, Dec. 1986.

3. DOE 1332.1A, "Uniform Reporting System"; U.S. Department of Energy, November 15, 1985.

4. DOE Order 4300.1C, "Real Property Management"; U.S. Department of Energy, 1992.

5. DOE Order 4700.1, "Project Management System"; U.S. Department of Energy, June 02, 1992 (Change 1).

6. DOE Order 5400.3, "Hazardous and Radioactive Mixed Waste Program"; U.S. Department of Energy, February 22, 1989.

7. DOE Order 5400.4, "Comprehensive Environmental Response, Compensation, and Liability Act Requirements"; U.S. Department of Energy, October 06, 1989.

8. DOE 5400.5, "Radiation Protection of the Public and the Environment"; U.S. Department of Energy, June 05, 1990 (Change 1).

9. DOE Order 5440.1E, "National Environmental Policy Act Compliance Program"; U.S. Department of Energy, November 10, 1992.

10. DOE Order 5480.11, "Radiation Protection for Occupational Workers"; U.S. Department of Energy, December 21, 1988.

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11. DOE Order 5820.2A, "Radioactive Waste Management"; U.S. Department of Energy, September 26, 1988.

12. DOE/EH-0256T, "Radiological Control Manual"; U.S. Department of Energy, June 1992.

13. DOE/EV/1830-TS, "A Guide to Reducing Radiation Exposure to As Low As Reasonably Achievable (ALARA)"; U.S. Department of Energy, April 1980

14. "Memorandum of Understanding on Responsibilities for Hazardous and Radioactive Mixed Waste Management"; U.S. Environmental Protection Agency and U.S. Department of Energy, February 22, 1984

15. "National Environmental Policy Act of 1969" (42 U.S.C. 4321 et seq.); U.S. Congress, Jan. 01, 1970

16. "Resource Conservation and Recovery Act of 1976" (P.L. 94-580), as amended by "The Solid Waste Disposal Act Amendments of 1980" (P.L. 96-482); U.S. Congress, Dec. 1980

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Figure 1
Integrated Process Work Flow Diagram

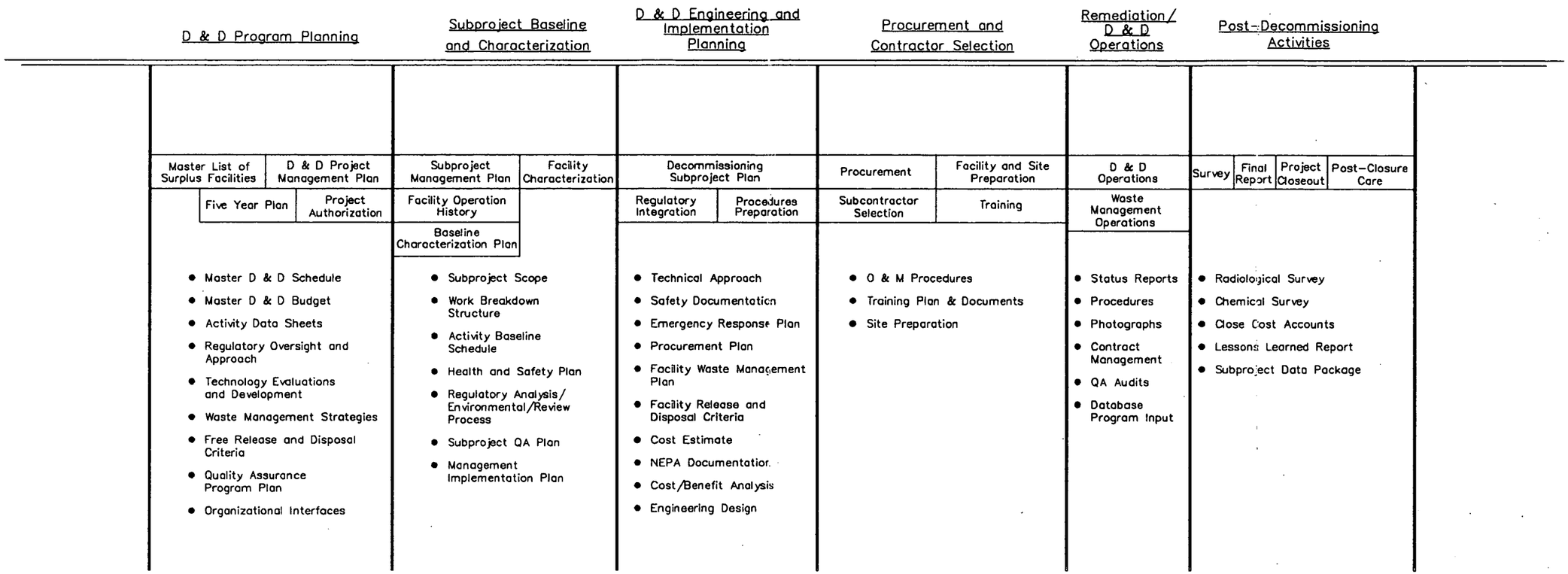

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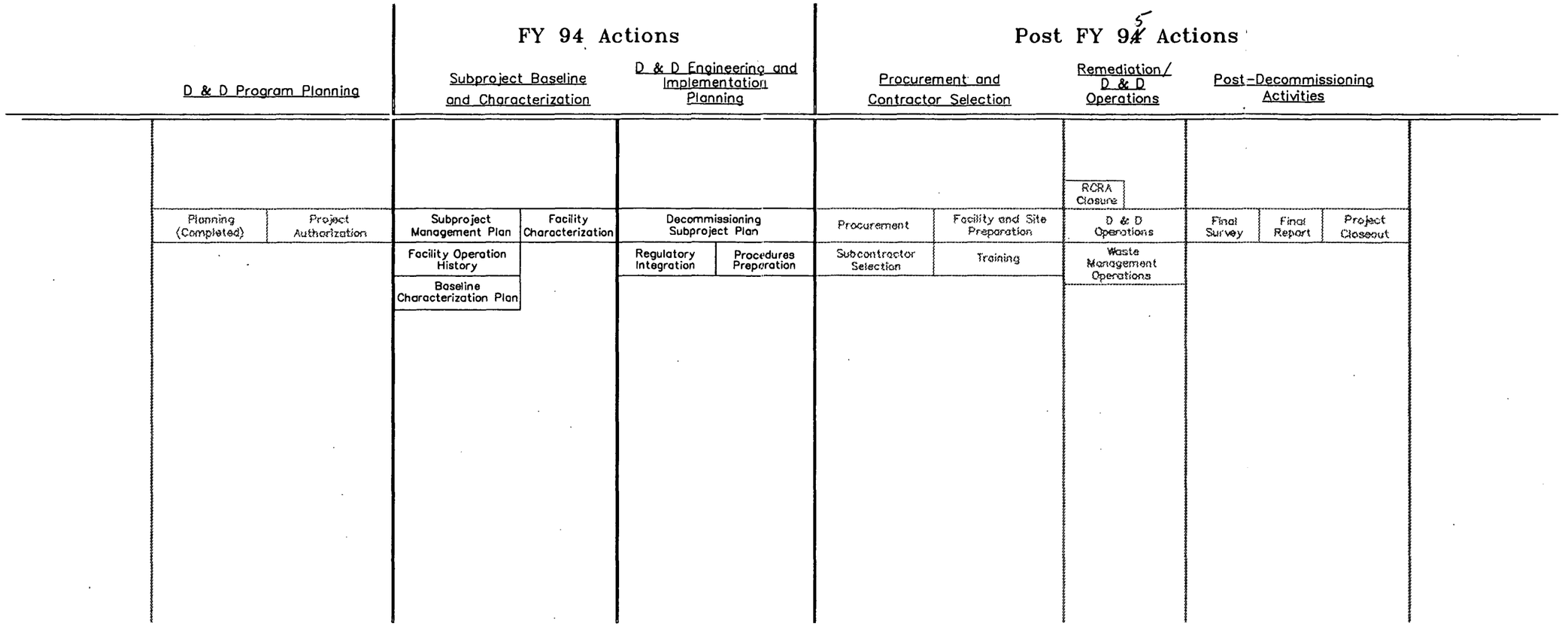
Figure 2
Building 788 and Ancillary Equipment
Generalized FY94 D&D Process Flow Chart



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